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PROSTATECTOMY, THE METHOD OF CHOICE IN THE MANAGEMENT OF PROSTATIC OBSTRUCTION.*

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Prostatic hypertrophy, directly or indirectly, is the cause of death in such a large proportion of elderly men that the question of its surgical management is one of the greatest importance. In the case of most individuals who so die at the present time no serious attempt is made to save life. The community at large is not as yet educated beyond the idea of the catheter, and the same, I am sorry to say, can almost be said of the medical profession. A few years ago a person could die of appendicitis in the absence of surgical treatment and no adverse comment would be provoked by the event. Now, however, such a happening is regarded by the sensible portion of the community much as is the death of a person under faith-cure treatment, and no physician who is careful of his reputation fails at least to raise the question of surgical interference in cases of this latter description.

It is not to be expected that resort to radical surgery will ever become as general in the case of prostatic obstruction as in that of appendicitis, since the former disease is consequent to advanced life and the other is not.

The question of senility is the one to be prominently considered in connection with prostatic surgery. Upon it is based the chief and often violent opposition of those related to or standing sponsor for the patient. In weighing opposition of that character I am very apt to recall what a very bright and elderly gentleman once told me in commenting on the proper limit of life. He said: "It is not desirable to live to too great an age. If an old man is without means, those on whom he is dependent after a time grow tired and are then satisfied when he dies. If, on the other hand, he has means, then those waiting to inherit become impatient if life is too long prolonged." Pure love and devotion is without doubt the cause for such opposition in most cases, I am glad to say; still, many times one is compelled to observe the truth of these somewhat cynical remarks. The younger, of course, a patient is the better. The question of operation is, however, rarely raised before the age of 57 to 60. When a patient is under 65 I look upon him as young in connection with prostatic surgery, and when between 65 and 72, as middle-aged. Formerly I was inclined to put 75 as an extreme limit and to rather advise against operation and in favor of a do-nothing policy had a patient passed that age. Finding, however, that my results were good right up to that limit, I have raised it. During the last year I have gotten two strikingly good results, one in a man of 78 and the other in a man of 77. Aside from their ages these individuals were both apparently very bad surgical risks. The man of 78 was bedridden. He had a suprapubic vesical fistula and putrid urine. He was moderately emaciated, the effect of pyrexia occasioned by the absorption of bacterial urine. The fistula was the result of a suprapubic cystotomy undertaken in the vain hope that some relief might follow its establishment. The individual of 77 represented a case of surgical emergency for the relief of extreme and constant vesical tenesmus unrelieved by opiates pushed as far as seemed judicious. The lesion in this case was a large obstructive prostate, which was undergoing peripheral suppuration, and a resulting phosphatic calculus nearly 3 ounces in weight. The individual at the time of operation was mentally excited and somewhat irrational, which I took to be a symptom of uremia, although it is possible that the opium may have been to a greater or less degree a causative factor.

A surgeon should always be influenced by age. A man of 60 or thereabouts is in a different position from a man of 75 or over. The former individual can naturally hope for a much longer lease, not only of life, but also of its attendant enjoyments than can the latter. Men in their sixties are often the most valuable members of society. The surgical question with individuals of that class is not only to prolong life, but to save them from invalidism, keeping them bodily vigorous so that not only can they enjoy their advancing life, but their families and the public can also profit by their wisdom, protection and experience. Consequently with them, even though a surgical emergency has not arisen, operation should be advised. In those of 75 or thereabouts, if sufficient relief attends the use of the catheter so that life is reasonably bearable, radical operation should perhaps only be urged if there be good reason to suppose that the catheter will in the near future fail to relieve suffering and avert death. In a case of emergency a prompt resort to radical surgery should be employed, not only to save life, but to relieve suffering, so that if death must occur it will at least be placid.

Aside from the question of age, the surgeon in considering operation should be guided by the physical and mental condition of the individual. The existence of arterio-fibro-sclerosis can be mentioned as a decidedly unfavorable condition, since chronic interstitial nephritis always coexists. Calcareous infiltration into the walls of the blood vessels is a bad, but not contraindi-

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: Drs. W. J. Mayo, H. O. Walker, and A. J. Ochsner.

cating, feature. History of antecedent dissipation, the existence of pulmonary, cardiac and other defects, should be weighed as unfavorable factors, just as before any surgical operation. Putrid urine and the presence of an ascending pyelitis, together with some involvement of the kidney, should not be made to stand in the way of operation, but their existence should strengthen the plea for speedy relief from prostatic obstruction, the direct cause for their presence and continuance. Where such infective processes exist, uremia and death will finally result from their progression, so it may be in a given instance that operation has been too long delayed and that death is thereby to a slight degree hastened. In very many such instances, however, where the infective complication appears extensive and serious, radical operation is followed by a perfect recovery.

The decision having been made to resort to radical relief from prostatic obstruction, the next question that arises is how to accomplish that relief. In the majority of cases that come to my notice there is no occasion for debate on that point, the question of procedure having resolved itself into that of prostatectomy or nothing, unless it be the establishment of a permanent suprapubic vesical fistula, a surgical makeshift that no progressive genito-urinary surgeon at present is apt to employ except in case of malignant disease. Some may take exception to this statement, and to such I explain that many times cases do not come to my notice until an emergency has arisen, an expert opinion being then for the first time sought.

In the minority of cases it may be proper in connection with the question of prostatectomy to consider the advisability of castration or of the Bottini operation as substitute measures.

The cases demanding prostatectomy and in which that operation alone will suffice, can be grouped as follows: 1, those not amenable to urethral instrumentation; 2, those demanding vesical or perineal drainage as well as relief from prostatic obstruction; 3, those in which renal infection exists as a complication; 4, all those complicated by phosphatic calculi in which litholopaxy is impracticable; 5, those in which the prostatic mass causing obstruction is such as to require direct removal, not being amenable to less radical surgical treatment.

By cases not amenable to urethral instrumentation are meant those demanding prompt relief from prostatic obstruction and in which some serious impediment to the passage of an instrument exists. Narrow meatus, soft or linear stricture of the penile urethra, or soft stricture of the deep urethra, are difficulties which can be easily overcome and consequently are not to be reckoned in this connection. Deep unyielding stricture or false passage are the urethral conditions which usually interfere. Not infrequently the anterior face of the prostatic hypertrophy juts so prominently into the urethral space as to make the passage of any catheter, except perhaps a metallic one with an extreme curve, impossible or uncertain. Oftentimes in cases of prostatic retention the membranous urethra is severely lacerated through unskilful and violent attempts at catheterization, a result which may make a subsequent passage of the instrument in competent hands impossible or so difficult as to be very injurious to the patient.

In many instances where a bladder, before it finally succumbs, has struggled successfully for a long period to overcome the resistance offered by an increasing prostatic obstruction, marked vesical lesions are developed, which require for their cure and the restoration of the vesical function not only the removal of the prostatic obstruction, but vesical rest as well, which latter factor can not be obtained except through a combined cystotomy. Severe inflammatory lesions of the bladder, the result of chronic cystitis dependent on prostatic obstruction, often demand direct vesical drainage and rest for their resolution aside from the removal of the existing cause. Periprostatic suppuration and perineal phlegmon due to lesions of the prostatic urethra resulting from constant catheterization require perineal drainage.

Where renal infection exists in this class of cases it is, of course, of an ascending variety. The chief agency in accomplishing its elimination lies in extreme and unobstructive diuresis, which can only be attained by thoroughly draining the bladder.

The reason for the necessity of prostatectomy in cases complicated by prostatic calculi which lie in the postprostatic cul-de-sac, out of the reach of the lithotrite, is evident without further comment.

Cases in which the prostatic mass causing obstruction is such as to require direct removal are those in which the mass is large, in which it projects extensively into the intravesical space, and in which its intravesical contour is decidedly irregular. In other words, it might be said that all cases of prostatic obstruction accompanied by a surgical emergency aside from that of simple retention, and all cases at all complicated or associated by complications are suitable for prostatectomy and that only, while as regards the easier and selected cases other surgical methods might perhaps be tried.

In making mention even of castration as a surgical method for the removal of prostatic obstruction many would be apt to criticise me on the ground that the procedure is now out of date, having been discarded by the profession. I think such criticism very likely justifiable. I do not myself remove the testicles for that purpose. I have seen a few well-authenticated cases wherein relief from the obstruction has followed that operation. Most of the cases which I have seen were, however, not relieved, but subsequently submitted to prostatectomy at my hands. I will not discuss the operation further in this connection. With the sudden subsidence of the operation just mentioned the procedure advocated by Bottini has again been brought to notice through the modification of the original operation adopted by Freudenberg and at the present time is receiving considerable attention. As Freudenberg's procedure is fairly well understood by the profession, no attempt will here be made to describe it. It has one great advantage in common with castration: It is easy of accomplishment, anyone who is at all familiar with the manipulation of urethral instruments being able to properly execute it. In that respect, and in that chiefly, to my mind, has it an advantage over prostatectomy. Owing to its ease of accomplishment many more practice it than attempt prostatectomy. The idea conveyed by the operation is attractive and far more popular than that of castration. The avoidance of cutting appeals to many, as does also electricity, the agency to be employed. Some who practice the operation emphasize the fact in advocating it that the operation itself is in a large measure free from after-discomfort, besides requiring brief confinement in bed. Others advocate a confinement of three weeks or thereabouts, treating the

procedure as one of considerable surgical magnitude. The statistics coming to hand of this operation in its present modified form are certainly attractive, especially those of operators who are very careful in selecting their cases, trying the operation only on subjects to which it is apparently best adapted. Such statistics show a slight majority of cases relieved of symptoms, while in a fair percentage of the minority more or less relief of symptoms is noted. There is a great difference between a relief of symptoms and a radical cure. A relief of symptoms occurs when a patient is again able to urinate with sufficient freedom to no longer require the aid of a catheter or be distressed through the performance of the act. A radical cure signifies a complete restoration of the vesical function, which means a complete emptying of the bladder at the end of every act of urination. In most of the best results after the Bottini operation some, and often considerable, residual urine always remains. After convalescence from prostatectomy, certainly as I perform it, there is no residual urine. The term radical cure should never be applied to a prostatic operation which does not eliminate the element of residual urine. In a good percentage of cases, however, the Bottini operation fails to relieve. The mortality attending it appears to be in the neighborhood of 10 per cent., perhaps somewhat under. Medical statistics concerning a new procedure should always be put on the shelf a while for seasoning before being accepted. The statistics which first appeared in favor of castration for the relief of prostatic obstruction were, I think I am correct in saying, even better than those in favor of the Bottini operation, but subsequent surgeons could never verify them. The cases suited to this operation are those free from the complications already mentioned, in which the prostatic obstruction takes the form of a moderate-sized middle lobe or of an hypertrophy and rigidity of the prostatic fibers encircling the vesical neck. A projecting middle lobe can be to a greater or less degree eliminated by the écraseur, while the constriction of an hypertrophied neck can in like manner be cut through in one or more places, the vesical neck being sufficiently liberated to allow of its resuming its function.

Although a surgeon, by means of the rectal feel, of exploration of the prostatic urethra, and of the cystoscope, can generally decide whether a given case is suited, as far as regards the prostate, to the Bottini operation, yet he can never be certain. On numerous occasions in the performance of prostatectomy on individuals where previous to operation conditions seemed suited to the Bottini operation, the actual state of affairs found to exist have made it evident to me that the Bottini operation, had it been chosen, would have been either a failure or at least unsatisfactory. This in itself is a good reason why one skilled in the performance of prostatectomy is apt to find few occasions wherein the Bottini operation appears to be the one of choice. If an individual is quite elderly, say around 75 or over, and is suffering from the obstruction due to a middle lobe of not great size, it might be, in the absence of contra-indicating complications, that the Bottini operation would then be the one of choice.

In prostatectomy the results obtained are permanent. As regards the Bottini operation there are grave doubts on that point. Weir, in a recent discussion at the New York Academy of Medicine, recalled the fact that twenty-five years ago or thereabouts he and several other New York surgeons made a thorough trial of the original Bottini method and found it unsatisfactory, one of the chief reasons being that in the few cases where improvement followed the operation the betterment was only temporary. The advocates of the Bottini operation generally repeat the operation one or more times in cases where the improvement following the first operation does not appear lasting. It seems to me if a satisfactory result does not follow a primary operation of this description, that a repetition of it should not be employed, but that prostatectomy should then be substituted. To my mind the reason that the results following the Bottini operation may not show lasting qualities is in large measure due to the cicatricial contraction which gradually results from the healing of the burnt area. If the eschar be made through the bladder wall and into a projecting middle lobe lying posteriorly to the vesical neck, then it seems to me that a good result following the operation ought to show a fair and perhaps a satisfactory degree of permanency. If, on the other hand, the one or more eschars be made through the vesical and prostatic fibers at the vesical neck itself, then it seems to me that the immediate good result following the freeing of the contraction must be temporary, the resulting cicatrix leaving the part more contracted and rigid than before operation. In such an instance the fewer number of eschars and the less true destruction of the tissues making up the vesical and urethral wall, the better. In the performance of prostatectomy as I advocate it the vesical and urethral structures are left undestroyed, the prostatic obstruction alone being removed, consequently there can be no resulting contraction. Where prostatectomy has to be performed secondary to the Bottini operation the cicatrix which has resulted from the first operation may increase the difficulty of the second.

The surgeon who does only the Bottini operation, not having perfected himself in the performance of prostatectomy, is usually a dangerous adviser, since he is not equal to the emergency when a case offers itself which is not suited to his operation. Of course, in such a contingency the surgeon doing only the Bottini operation can refer the case to a surgeon who has perfected himself in the performance of prostatectomy; but what is perhaps more probable, the Bottini operation is tried, a failure resulting, or else any attempt at operation is discouraged, the case being allowed to die by default.

The cry of mortality is loudly raised against prostatectomy. It has seemed to me that that cry has originated largely from one of the three following sources: From those who know nothing about the operation; from those who do only the Bottini operation, and from those who have tried the operation and failed. I think I am fair in stating from my own experience in case an individual is otherwise sound in body, is not over 65 years or thereabouts of age, and has not marked urinary infection that the mortality from prostatectomy is not greater than 5 to 8 per cent. From that low level the mortality rises, dependent on the combination of adverse conditions which may be present. One should never hesitate to operate on the most desperate surgical risks through fear of injuring his statistics, for in the bad cases death accompanied by great suffering surely occurs if nothing is done, while if prostatectomy associated with thorough vesical drainage, is performed, death, if not averted, is peaceful, the patient thanking the surgeon for the comfort he has afforded, or—and this happens in a large majority of the worst cases—the patient completely recovers.

I admit that prostatectomy is not an easy operation. As the subjects are old and do not tolerate long continued anesthesia with safety, the operator should work with great rapidity. As a rule I have so far completed my operation that the anesthetic can be discontinued at the end of ten to fifteen minutes, the operation having been commenced the moment the patient becomes fully unconscious, and the last suture tied as consciousness returns. The wound should be so treated and the drainage tubes so adjusted that the patient remains comfortable after operation and free from painful surgical ordeals. Besides surgical, many medical and nursing details should be attended to with great strictness. The technique of the operation as I perform it, together with all the associated details, are fully described in my book of last year, "Diseases of the Genito-Urinary System," and consequently do not require reiteration in this connection. There is no reason why anyone naturally apt as a surgeon, who familiarizes himself with the theory of the subject and then practices it, should not master the operation and attain good results. If a surgeon keeps his patient under an anesthetic for two hours or so in the performance of the operation, and does not attend to all the details which experience has shown to be necessary, most, and perhaps all, of his patients may die. With such an experience blame and condemnation is apt to be unjustly attributed to the operation.

PERINEAL PROSTATECTOMY.*

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Obstructive hypertrophy of the prostate gland causes so much misery and is productive of death in so large a proportion of aged men, that the profession must welcome every advance that is made in our means of treating this serious disease.

It is only in recent years that anything more than palliative treatment was applied to this condition, but in the last few years a great many new procedures have been devised, aiming at a more or less radical cure. The most prominent of these are prostatotomy by means of an electro-cautery knife which is known as the Bottini operation, and the various forms of prostatectomy. The author has devoted a good deal of effort and thought to the subject of prostatectomy and has devised a modification of one of the principal methods in vogue whereby he believes the operation has been very much simplified, and he also believes the mortality from operation by his method will be found to be much less than that attributed to other similar procedures.

When the prostate gland has become so enlarged as to produce obstruction to the outflow of urine from the bladder, most serious results ensue. The obstruction may be but partial, preventing the patient from completely emptying the bladder; the retained or residual urine in time becomes infected, setting up a cystitis, and from then on the life of the patient is one of torture. In some cases the obstruction is so complete that the patient is unable to pass any urine until the bladder has become fully distended, then the overflow may pass off by constant dribbling. This condition is often mistaken for one of incontinence of urine. The inflammation often extends from the bladder up the ureters to the pelvis of the kidney, resulting in pyelitis. After months or years of suffering these patients finally succumb to exhaustion and find a welcome release in death.

Of course, much may be done for relief of these patients by the judicious and careful use of the catheter and by proper washing of the bladder, but the catheter life is at best one of discomfort and jeopardy, some patients finding no relief whatever thereby, and all of them in constant danger of acute cystitis and all its attendant disasters.

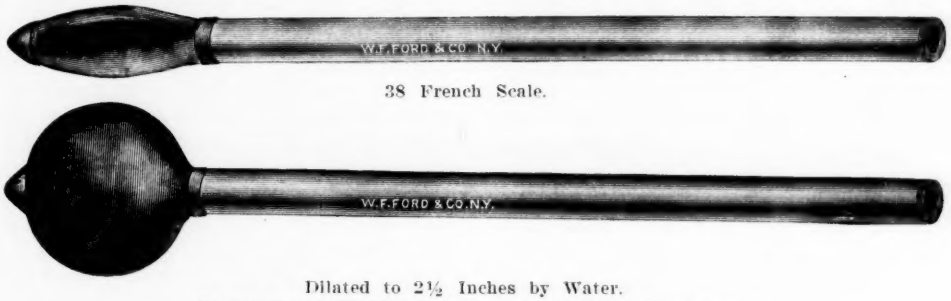
The Bottini operation was introduced about twenty-five years ago. It was at that time very extensively exploited and tested, but was found to be unsatisfactory and was finally abandoned. During the last few years it has been revived and it has to-day many enthusiastic supporters. Its object is to cut a groove through the middle lobe of the prostate so as to lower the urethral canal at that point; it is performed by introducing into the bladder an instrument like a curved urethratome. This instrument has a concealed cautery blade which is exposed when the instrument is in proper position, the electric current is turned on, burning its way through the floor of the urethra and into the surface of the lobe of the prostate. The author has had no personal experience with the Bottini operation and for many reasons it does not appeal to him as a sound surgical procedure. In the first place, it does not remove the hypertrophied prostate and can only partially relieve the obstruction in most cases. In the second place, it leaves a slough to separate and come away through the urethra. There being no other means of drainage than through the urethral canal, and this burned wound being in the presence of infected urine, it seems to the author that it can not be as safe a method as some of its advocates think it is. The only statistics which the author has read show that this operation is not free from danger, and that it does not result in complete cure in the majority of instances. The author believes that prostatectomy will be the favorite operation if the risks can be reduced so as to make it a feasibly safe procedure.

Unfortunately, prostatectomy, by most methods, has shown a large death-rate, though the results when the patient survived have been generally excellent. The author has so far been very fortunate, having lost no patient, and having had a complete cure in all his cases except the second one. In that case he was unable to remove the whole prostate on account of the fact that there had been a suprapubic cystotomy performed a year or two before he saw the patient, and at the time of his attempted prostatectomy there was a suprapubic abscess which had firmly fixed the prostate so that it could not be reached through the perineum. Since entering this field of work the author has been of the opinion that the high mortality rate was in part owing to the fact that the operations were too extensive and too complicated, and his object has been to devise some means whereby the prostate could be removed simply through a median perineal incision. He has felt that suprapubic cystotomy for this class of cases was a dangerous proceeding to be avoided. In an article entitled "Prostatectomy," read before the New York Surgical Society on Nov. 9, 1898, the author sug-

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: Drs. W. J. Mayo, H. O. Walker and A. J. Ochsner.

gested the following modification of Alexander's method of prostatectomy: To make a small incision through the abdominal wall just above the bladder fold through which the operator could pass two fingers and with them push the prostate, bladder and all, toward the perineum, enabling him with a finger of the other hand to reach and enucleate the prostate through a median perineal incision. It will be remembered that Alexander accomplished this same object by making a suprapubic incision in the bladder, through which he passed two fingers of one hand and pushed the prostate down.

The author has never tried the laparotomy as suggested above, because he was able to devise a much simpler means for accomplishing this same object. At the meeting of the American Medical Association, held at Atlantic City, June 5 to 8, 1900, the author presented a bladder retractor which he had invented, which enables one to pull the bladder and prostate down into the perineum so that the lobes can be reached and enucleated with the index finger. This retractor consists of a soft rubber bulb, cemented on to the end of a strong rubber tube of a caliber of 38, French scale. It is introduced into the bladder through an opening in the membranous portion of the urethra, the bulb is then distended till it has a diameter of two and a half to three inches. This distension of the bulb is effected by forcing a definite quantity of water through the tube with a piston syringe. The tube is then clamped, and when pulled upon it will draw down the bladder.



38 French Scale.

Dilated to 2½ Inches by Water.
Parker Syms' Bladder Retractor, for Perineal Prostatectomy.

The author operates in the following manner: The patient is prepared by a few days' rest in bed, during which time he is kept on a milk diet, and his bladder is carefully catheterized and irrigated if he has cystitis. Ether narcosis is used; the patient is placed in the lithotomy position; the perineum and adjacent parts are properly shaved and scrubbed, and the urethra and bladder are again carefully irrigated with boracic acid solution. A free median incision is made which shall open the perineum from just behind the bulbous portion of the urethra to the vicinity of the anus. The dissection is carefully carried down to the urethra in the median line, and if possible to reach the prostate at once, it is freed as far as may be by blunt dissection, carried on mostly with the index finger of the right hand. From time to time the operator must introduce a finger protected with a rubber cot, into the rectum, so as to be sure that this organ is not wounded. A staff is introduced into the urethra and an incision about an inch long is made in its membranous portion. The staff is removed and a catheter passed through the opening in the membranous urethra and the bladder is again repeatedly washed. The author's retractor collapsed is introduced into the bladder through this opening in the urethra; when it is known to be well inside of the bladder it is dilated in the manner described above, with a quantity of water which is known to give it a diameter of fully two and a half inches. The rubber tube is clamped so that the water will not escape, traction is made on the tube till the prostate comes satisfactorily within reach, then an assistant holds the rubber retractor firmly, bending it up over the perineum and it will not be in the way. Now, with the index finger of the right hand, the operator perforates the capsule of the left lobe of the prostate and begins its enucleation. If the proper line of cleavage is found the lobe will shell out quite readily, and finally it can be grasped with vulsellum forceps and removed. Next, the operator removes the middle lobe in the same manner, and finally, the right lobe, thus completing the operation. Now the retractor is emptied by removing the clamp; it is withdrawn from the bladder and a large perineal drainage tube is introduced through the urethra to drain the bladder. The wound around this tube is thoroughly packed with iodoform gauze, the tube is secured by one suture, a pad is applied with a T-bandage and the patient is ready for bed. When in bed, the patient's bladder must be again irrigated through the drainage tube, and then continuous drainage is carried on by syphonage, a long tube being attached to the drain, the distal end of it being kept submerged in a disinfectant solution. The quantity of this solution must be measured so that one may know the quantity of urine being voided.

The gauze packing is removed on the fourth day and replaced by a much smaller piece. The drainage tube is removed on the fifth or sixth day, and thereafter the bladder is washed by means of a catheter passed through the perineum, until the wound has nearly healed.

These patients are allowed to sit up by the seventh to the tenth day. When the wound is considerably contracted a full-sized steel sound is passed through the entire urethra, at first every third day, then at longer intervals until healing is complete.

To one accustomed to operations on the prostate this particular method will be found to be comparatively simple and not a very difficult one to perform. Of course, one should be thoroughly familiar with work in this region and on these organs in order to use the best judgment as to how much should be done, and in order to be expeditious. When properly performed the operation is not a formidable one, the hemorrhage is very slight and the patients suffer comparatively little shock.

The author feels that prostatectomy will be proven in the future to be a thoroughly sound and proper procedure. He believes the death rate will be no more than is compatible with a condition that is in itself so grave and menacing. He feels, however, that prostatectomy should not be left as a last resort. It should be performed before the patient is in a dying condition, or not at all. Any man who is not physiologically very old, whose arteries are in fair condition and who is not suffering from marked kidney lesion may be expected to undergo this operation with comparative safety, pro-

vided it has not been left till his bladder is badly inflamed and till he is suffering from sepsis. The author feels assured that by his method every hypertrophied prostate may be removed through a simple median incision in the perineum, and after this is accomplished it will be seen that there is not a formidable wound; in his experience it has been found that the patients have been actually better the day after the operation than they were the day before, on account of the relief afforded by the immediate drainage of the bladder.

The author has operated on nine of these patients; the last six were done in the manner just described. His first case was done by the method of Alexander. His second case was incomplete for reasons already stated. His third case was done entirely through the perineum, the prostate being easily reached, an assistant making pressure on the abdominal wall, which was thin and yielding. This was before he had devised his retractor.

His patients have ranged in age between 53 and 75 years. All have had cystitis except one case. Two of his patients had bladder stones—one had a simple large calculus, the other had five of moderate size. The residual urine in his cases varied in amount from 3 to 5[illegible] ounces.

The author's patients have all lived. In his second case relief was only partial. In all the other cases cure has been complete, the patients having no obstruction to the passage of urine and no remaining cystitis and no residual urine. In two of his cases there was incontinence of urine for some weeks, but this condition gradually subsided and the patients regained control of the bladder.

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NOTE:—Since presenting this paper the author has learned that one of his patients has had some trouble from incontinence of urine. Otherwise no unfavorable result has been reported.

PROSTATECTOMY VERSUS PROSTATOTOMY IN THE RADICAL TREATMENT OF SENILE HYPERTROPHY OF THE PROSTATE.*

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In senile hypertrophy of the prostate there is sometimes obstruction to the outflow of urine, due to an enlargement or deformity of the middle or lateral lobes, giving rise to a series of disagreeable symptoms, such as frequency of urination, pain, tenesmus, burning or acute retention, and resulting in complete or incomplete retention, followed in nearly every case by cystitis, pyelitis, and fatal nephritis or pyelonephritis.

With the object of overcoming this condition the following various procedures have been resorted to: The use of the catheter to relieve the retention by drawing off the urine as frequently as indicated by the amount of residuum; suprapubic fistula, by means of which an artificial urethra is made in the hypogastric region, through which the patient urinates, or draws his urine by a catheter or tube; dilatation of the prostatic urethra with sounds or dilators every few days; galvano-puncture, by means of a platinum needle attached to the negative pole of a galvanic battery, and inserted into the gland; hypodermic injections of iodid of potassium and iodin, or ergot and alcohol into the gland; ligation of the internal iliac arteries; castration; vasectomy; prostatotomy, and prostatectomy.

Of these various methods none are now employed in this country excepting catheter life, prostatectomy and prostatotomy. The catheter can at present be said to be used only when the patient is in need of an operative procedure for the relief of his urinary symptoms, and when it is considered dangerous to do a prostatectomy or prostatotomy on account of his general condition; it is also used prior to either of the operations, with the object of treating the bladder and reducing prostatic edema or congestion. The catheter is also employed in the after-treatment following prostatotomy and prostatectomy until an accompanying cystitis has been cured and the bladder has regained some of its tone. In many cases drainage by a retained catheter may be necessary. A description of catheter life and the uses of the catheter in prostatic hypertrophy has been given by the writer in a previous article.[1]

PROSTATOTOMY.

This consists in making incisions through the gland by the knife or cautery, with the object of reducing the impediment. During the latter part of the nineteenth century great interest was taken in this procedure, which was considered the coming operation for the relief of senile hypertrophy, and the leading genito-urinary surgeons of the world advocated the operation.

Robinson recommended incising the prostate through the rectum. His method consisted in introducing his left forefinger into the gut as a guide, and then inserting the knife along it and dividing the prostate into two halves.

Harrison, at the International Medical Congress in Copenhagen, in 1887, advocated performing an external perineal urethrotomy, and then inserting the knife into the prostatic urethra, and dividing the prostatic bar on the floor of the gland, after which he stretched the prostatic urethra forcibly with his fingers or a sound. He was personally very much pleased with this method, and many surgeons, both in this country and abroad, followed his footsteps.

Mercier devised the prostatotome for cutting the middle lobe of the gland through the urethra. This resembled the Bottini incisor in that it had a sharp male blade which he drew forcibly through the floor of the prostatic urethra, making an incision through the impediment.

Gouley modified Mercier's operation, inserting the instrument through a perineal incision into the urethra and cutting or punching out segments of the enlarged gland. In this way he often removed large portions of the prostate.

Maisonneuve then devised the sécateur, by means of which he incised the prostate through the floor of the urethra. It was one of the most ingenious instruments ever brought before the public, although not so useful or as lasting as his famous urethrotome. The instrument was shaped like a sound. In the center of the convexity, working on a pivot and lying concealed in the groove, as far back as the end of the instrument, was fastened a cutting blade. After the beak was caught behind the vesical base of the gland the blade was made to move in the arc of a circle, thus making an incision in the gland through the floor of the urethra and landing in a slot in the straight part of the shaft, where it again concealed itself, or else was pushed forward to its former position before the instrument was withdrawn.

In 1877, Bottini of Padua, Italy, invented the galvano-caustic incisor, an instrument very similar to Mercier's in its general form, but differing from it in that

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: Drs. W. J. Mayo, H. O. Walker and A. J. Ochsner.

1. N. Y. Med. Jour., March 2, 1901.

the blade was connected with a storage battery, and cauterized instead of simply cutting. He performed many operations with this instrument, and published statistics which seemed too good to be true. Other surgeons in France and England who took up this procedure, did not have such favorable results, and looked upon it as a failure and one of little merit. Some three years ago, however, Freudenberg of Berlin, modified the Bottini instrument in such a way that it is now the most valuable that has yet been devised for the operation of prostatotomy. He used a broader blade made of irido-platinum and utilized the hollow shaft of the instrument on either side of the slot, to allow water to flow through and keep the instrument cool during the operation. The Freudenberg instrument was superior to any of the cutting ones in that it gave rise to less hemorrhage, and there was less danger of infection, for the cauterizing knife

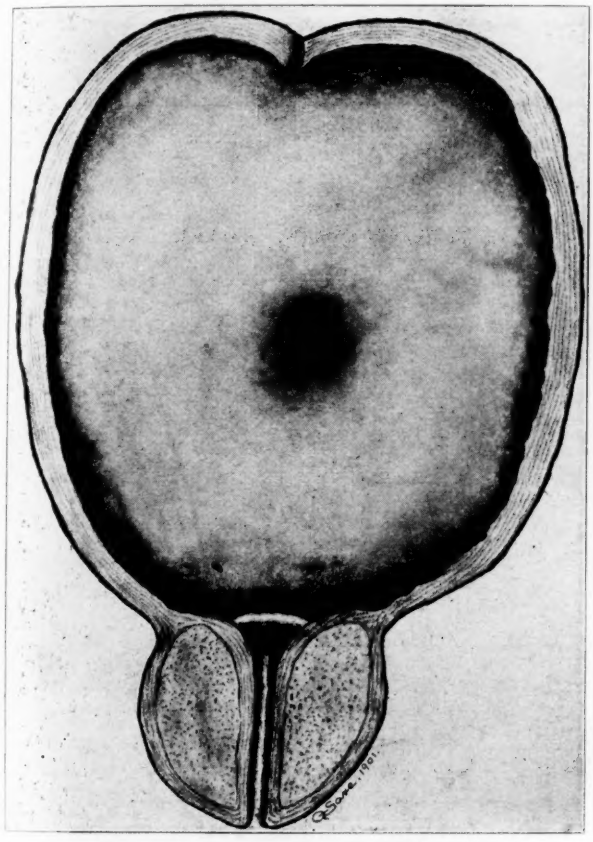

Fig. 1.—Prostatic bar. Bottini's operation.

as it went through the gland sealed up the vessels, preventing bleeding and also closing them against infection. Besides this, the tissues which were burned for some distance on either side of the incision were thrown off as a slough during the three or four weeks following the operation, thus producing a gutter of considerable width. It can therefore be seen that this operation diminished the prostatic impediment, not only by making one or more gutters through it, but by shutting off the blood supply and thus causing atrophy of the gland. Prostatotomy by the Freudenberg-Bottini method is then the sole surviving operation used at the present day, and is one which we must consider under the so-called radical operations for the relief of prostatic hypertrophy. It is employed with a few modifications in the same manner by all surgeons who employ it.

The results of prostatotomy are most favorable, and I will quote from Freudenberg's last article[2] in which he collected 753 cases. Of these there were 622 successes, 44 deaths—12 of which were not positively due to the operation—but the total of deaths was 5.8 per cent., and 17 failures.

The Technique of the Bottini Operation.—The patient should lie on his back on the table. He can be operated on either under local anesthesia by cocain or eucain, or under general anesthesia by ether, chloroform or nitrous oxid gas. Personally I prefer general anesthesia by nitrous oxid gas. On the patient's left should be hung a fountain syringe, which contains water for cooling the instrument, and, on a stool near the patient's waist, the battery should be placed. A soft rubber catheter, lubricated with glycerin, is passed into the bladder, the urine is drawn off and the bladder is washed out with boracic

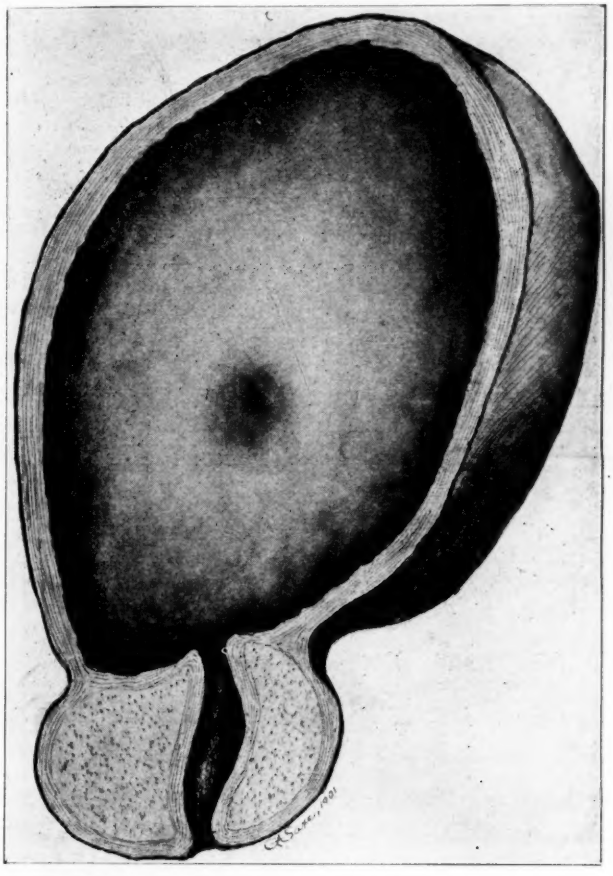

Fig. 2.—Prostatic bar. Side view.

acid solution and 6 ounces of the fluid allowed to remain in, after which the incisor is introduced and the operation performed. If a local anesthetic is to be used the bladder should be emptied, after which, before the catheter is withdrawn, a urethral hand syringe with a 4 per cent. solution of eucain or cocain is injected into the bladder and the posterior and anterior urethra as the catheter is being removed. From this moment the work should be done quickly and accurately, and I have observed that the more quickly the operation is performed after the injection of the anesthetic in cases of local anesthesia, the less painful it is to the patient.

If cystoscopy is performed the time required for it will usually be sufficient to allow the effect of the anesthetic to pass off before the actual operation is begun, and for this reason I think it advisable either to use the cysto-

2. Centralb. f. d. Krankh. d. Harn und Sex. Org., 1900.

scope at an earlier date, or to again inject a local anesthetic after the cystoscopy. It seems to me for this reason that it is advisable to omit the cystoscopy just before the operation, as advised by some, and to consider it as having been performed previously when the patient was examined. Therefore, after the cocain has been introduced into a clean, empty bladder and urethra, the catheter should be quickly pushed back again and six ounces of water injected into the viscus, after which, the catheter being quickly withdrawn, the incisor is introduced. If it catches in the deep urethra, the pelvis should be elevated; this will allow it to enter the bladder if the handle is depressed and a slight upward push is given to the instrument. If it still catches the patient must be anesthetized. In four cases under eucain anesthesia I have failed to pass the instrument. I afterwards operated in three of these under nitrous oxid gas

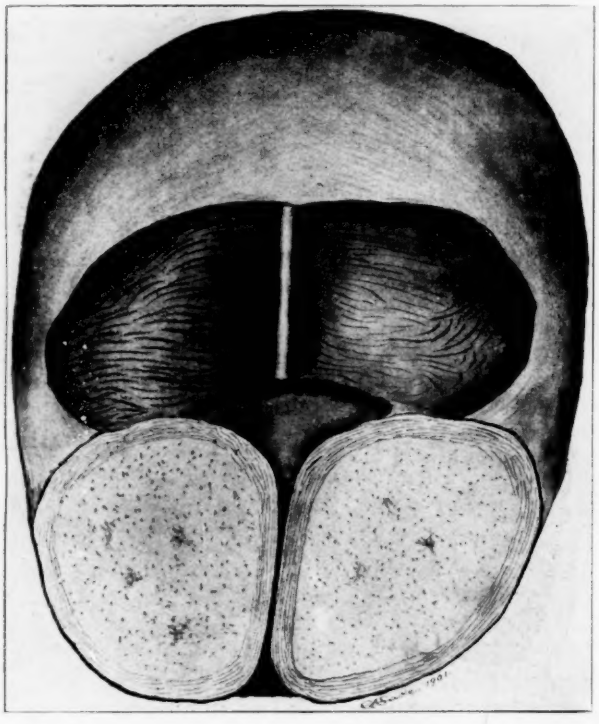

Fig. 3.—Enormous lobes: bar: enucleation by perineal method.

anesthesia and introduced the instrument without difficulty. The obstruction is generally a spasm of the vesical sphincter.

After the instrument is in the bladder its beak is turned downward and drawn forward until it catches against the base of the gland. The left forefinger is then introduced into the rectum to see if the instrument is in place. If so it should be held there, the connection made with the battery and a current of 45 amperes turned on, after which the wheel of the handle on the instrument should be turned, drawing the knife through the gland and burning a furrow in it. The current should then be shut off while the instrument is being rotated to one side at right angles, when it should again be opened and an incision made through one of the lateral lobes, then in a similar way through the other.

After prostatotomy a catheter should be retained for a few days, the patient should be given some urinary antiseptic and a milk diet, and should be instructed to drink large quantities of water. Ten grains of urotropin given three times a day is the best urinary antiseptic.

In cases in which the gland is irregularly enlarged and the posterior urethra distorted by the hypertrophy, it is sometimes advisable to perform a perineal urethrotomy for drainage after the operation. In a number of cases after the operation there was difficulty in introducing the catheter. This was caused by a straight cut having been made from the center, or most dependent part of the vesical base of the gland, down through it, which not only may not have gone into the urethra, but which may have pushed a portion of the gland to one side, thus obstructing the canal more than previous to operation. In these cases I should advocate an immediate perineal urethrotomy, with the introduction of a perineal drainage tube of large size, 34 to 36 French. In an operation under local anesthesia, by a colleague, the patient shrank back and allowed the beak of the instrument to slip forward over the convexity of the gland, thus cut-

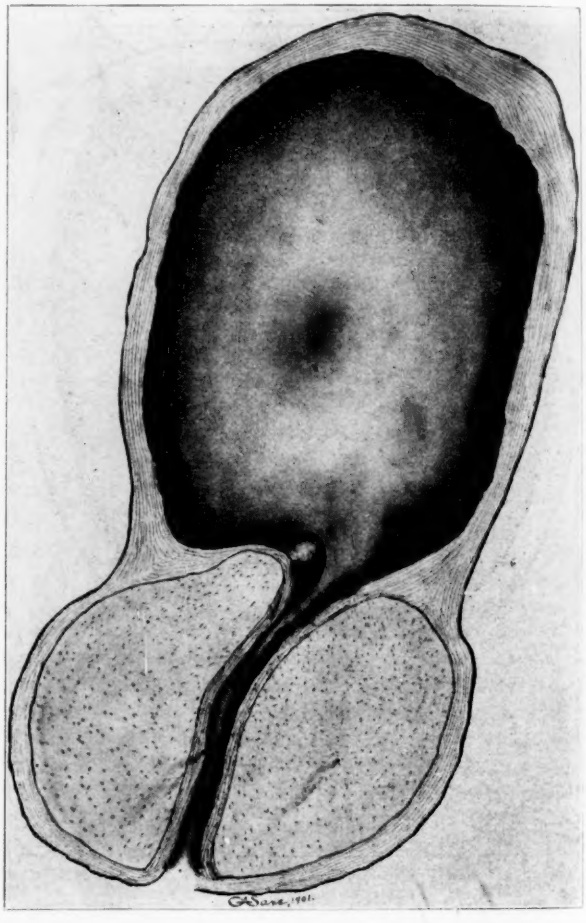

Fig. 4.—Side view. Enormous lobes: bar: perineal prostatectomy.

ting into the membranous urethra and perineum. A perineal urethrotomy was not performed at the time, necessitating a further operation for retention; death from uremia and sepsis followed. This patient would have been saved in all probability had a perineal operation been performed at the time. I have seen other cases in which I am sure that had I performed a perineal section, my patients would have had a better result.

PROSTATECTOMY.

This is the operation by which the gland is removed. For a number of years attempts have been made to remove pieces of it through perineal incisions into the urethra and suprapubic incisions into the bladder. Within the last ten years, however, much advance has

been made in this operation, until we now have operations by the suprapubic, perineal, and the combined methods, as also those by extensive dissections. This last class of operations, namely, those involving extensive dissections between the rectum and the prostate gland, as Zuckerkandl's, Von Dittel's, Rydygier's and others, are now never used.

McGill can be said to be the father of the advanced movement in prostatic surgery. He began by removing small pieces in an unscientific way through the bladder after a suprapubic cystotomy, and improved his technique with experience until he succeeded in performing a fairly satisfactory enucleation. His method was briefly as follows: He performed a suprapubic cystotomy and attached the bladder to the abdominal wall; he then inserted curved scissors through the bladder, cutting away as much as possible of the prostatic protrusion

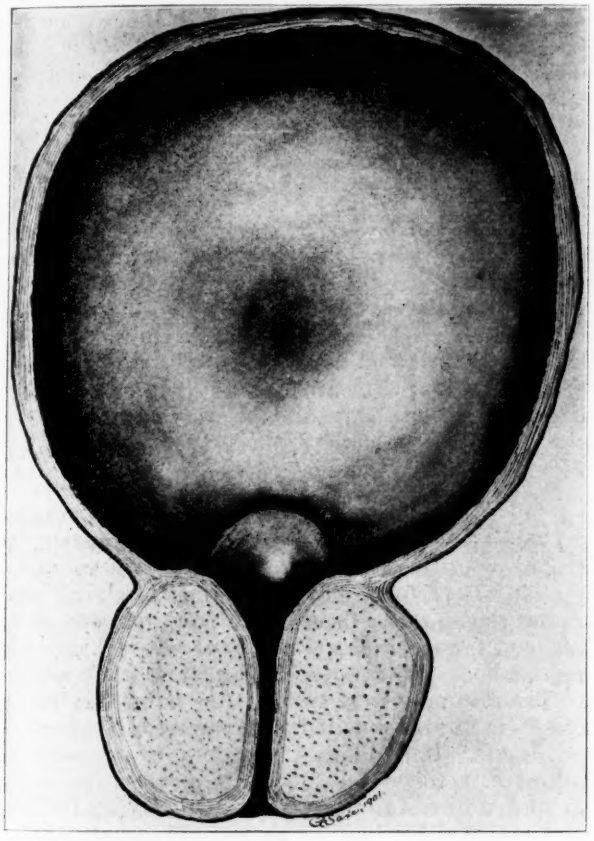

Fig. 5.—Middle lobe hypertrophied: enucleation, suprapubic method.

and helping the process by grasping the growth with the forceps and pulling it up while he cut beneath. In this way he cut through the tissues over the most prominent portion, enabling him to insert his finger and enucleate, aiding himself by means of the forceps. By this means he removed pieces varying in size from a bean to cricket ball, going to prove that in these latter cases he had evidently performed a complete enucleation. After the gland was removed the bladder was drained for a few days.

Bellfield modified McGill's operation by advocating the additional operation of perineal urethrotomy to facilitate drainage. Fuller has since then improved the technique, and advised counter-pressure by the fist against the perineum. This pressure certainly facilitates the removal of the gland. He also drains through the perineum after a boutonnière operation. Other surgeons think it better to enucleate through a perineal incision.

Nicoll was the first to outline a well-defined method of procedure by this route. He performed a suprapubic cystotomy and attached the bladder to the skin; he then made an incision in the perineum as one would for a perineal urethrotomy, and a second incision at right angles to it in front of the anus, forming a T. He then dissected up in the perineum anterior to the rectum as far as the prostate, and having cut through the capsule he inserted his forefinger of the right hand between it and the gland; then, introducing the fingers of the left hand into the bladder suprapubically, he made counter-pressure while he enucleated the gland with the finger of the right hand. Sometimes he used instruments to assist him. He drained through the urethra by means of a retained catheter without performing urethrotomy.

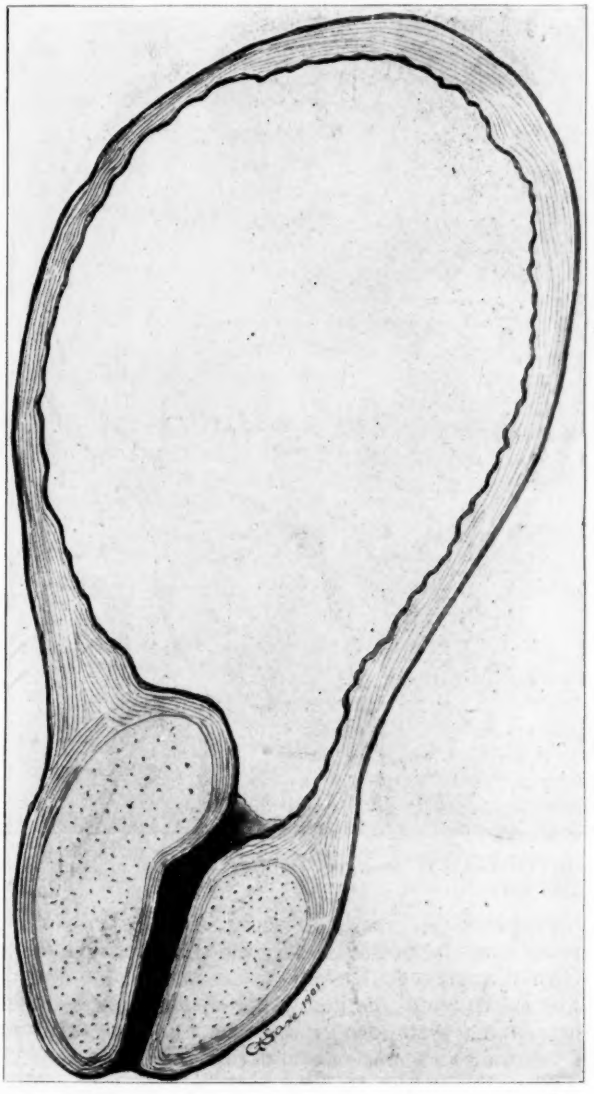

Fig. 6.—Hypertrophied middle lobe. Profile view. Semi-diagrammatic.

He packed the perineal wound with gauze, took out the stitches suprapubically, and allowed the bladder to fall back again.

Alexander modified Nicoll's operation by going into the prostate through a perineal incision made into the membranous urethra up to the apex of the gland. He then incised the capsule and inserted his finger in it for

enucleation, making counter-pressure through an opening in the bladder while he enucleated. He drained both suprapubically and through the perineum. In both these methods the bladder had to be opened suprapubically.

Syms of New York endeavored to obviate this necessity by an ingenious device, consisting of a hard rubber tube with a soft rubber balloon at the end. This he inserted into the bladder through a perineal opening, after which he inflated the bag with water, and had an assistant make gentle traction upon it, thus drawing down the base of the gland and steadying it while he enucleated through the perineal incision.

Methods.—Two methods of prostatectomy are employed by the author of this paper: 1, the vesico-rectal method, presented in a paper[3] read before the thirteenth International Medical Congress in Paris; and, 2, the

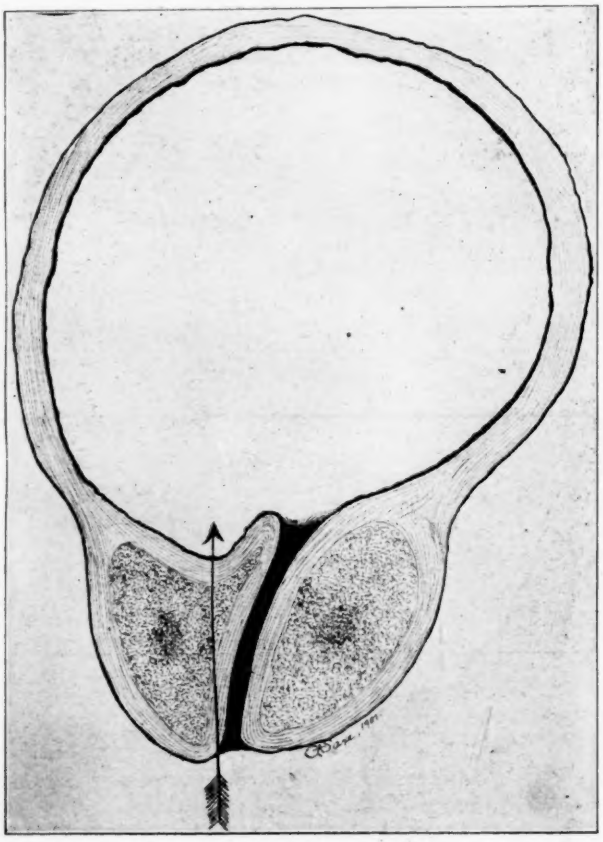

Fig. 7.—Tortuous prostatic urethra. Bottini useless. Semi-diagrammatic.

perineo-prevesical method, using counter-pressure in Retzius' space, presented before the third Pan-American Medical Congress in Havana.[4]

The vesico-rectal method is briefly as follows: After a suprapubic cystotomy, insert the two fingers of the left hand into the rectum, and the index finger of the right hand into the bladder and palpate bimanually; pass a pair of sharp pointed, curved scissors into the bladder and thrust the points through the most prominent part of the gland, or the portion just behind the internal meatus and open the blades, thus tearing the tissues covering the gland; then insert the finger tip into this tear and work it around between the gland and the capsule, making counter-pressure with the two fingers in the rectum. After the gland has been enucleated pass the scissors in again and cut through the floor of the prostatic urethra to prevent the formation of a pocket, then bring the patient into the lithotomy position and do an external perineal urethrotomy and insert a perineal tube for drainage. Insert another tube into the bladder suprapubically and sew the bladder wall tightly up to it. Close the abdominal wall above and below the tube. Leave the suprapubic tube in for one week, and the perineal tube for three or four weeks. This is the quickest method of removing a prostate with which I am familiar.

The perineo-prevesical method consists in first making an incision suprapubically into the prevesical space without going into the bladder; then placing the patient in the lithotomy position and doing an external perineal urethrotomy; next passing a pair of sharp-pointed scissors into the perineal opening, cut through the capsule of the prostate, after which the tip of the right index finger is pushed in between the capsule and the gland and enucleation begun, while counter-pressure is made over the base of the prostate by the finger in the prevesical space. After the gland has been removed a perineal drainage tube is inserted into the bladder, and the skin and superficial perineal fascia sewn up to it. The suprapubic wound can then be closed, or a drain can be left in for a day or so. I consider this the safest method of performing a prostatectomy that has as yet been devised, although not so rapid as by the vesico-rectal method.

After all prostatectomies the patient should have 1/30 of strychnia hypodermically and a pint of hot saline solution, to be retained. After this strychnin, hot saline enema, water by the mouth, hot bouillon, or whisky alternately every four hours, so that every hour he receives something. Water should be pushed from the first, and if he vomits, more should be given.

RESULTS.

In reading the literature of the last few years we find 152 well-reported cases of prostatectomy, in which the operation was performed by the suprapubic, the perineal, and the combined methods. Of these 95 were suprapubic, and the remainder were by the perineal and combined methods. There were 25 deaths and 127 recoveries. The recoveries were spoken of as failures in 17 and successes in 27; the remainder as improved, recovered, or good results. It is difficult, therefore, to say what the results are in these cases of recovery, excepting in the ones spoken of as failures, cured or successful, for a recovery means either that the patient did not die, but has recovered from the operation, or that he has recovered his former health.

COMPARISON.

In comparing the results we have obtained from the tables quoted of prostatotomy and prostatectomy we note that in the former, prostatotomy, in 753 cases there were 622 cures, 44 deaths and 87 failures. In the latter, prostatectomy, there were 152 cases, 110 recoveries, including cures, successes, recoveries, good results and improved; 25 deaths and 17 failures. Figuring by the percentage in prostatotomy there were 82.5 per cent. of cures, 5.8 per cent. of deaths, 11.5 per cent. of failures; while in prostatectomy there were 72.3 per cent. of cures or improved, 16.4 per cent. of deaths and 11.2 per cent. of failures. From this it will be seen that the mortality in prostatectomy is three times as great as it is in prostatotomy. In those who survive, the failures are about as frequent as in prostatotomy, but the recoveries are better. It is difficult to say

3. N. Y. Med. Jour., Dec. 8, 1900.
4. Phila. Med. Jour., April 20, 1901.

what a cure is in these cases. It seems to me that if a patient can empty his bladder of all the urine excepting perhaps .5 ounce of residual that the result obtained is first class, especially if he is relieved of his symptoms. Of course, the surgeon and the patient look upon the results in a different way. If the amount of residual urine is very much decreased, and the condition of the urine better, the surgeon considers it a good result; the patient, however, does not consider the result good unless the disagreeable symptoms are removed, such as the frequency of urination, pain, tenesmus and burning. It may be said that in those recovering, the results from prostatectomy are much better and more permanent than in prostatotomy. In prostatectomy we never have to perform the operation but once, whereas in prostatotomy we must often repeat it.

The indications that will decide us as to which operation should be performed are: 1, the age of the patient; 2, the size of the prostate, and, 3, the condition of his kidneys and bladder. It may be said in a general way that middle-aged men with very large prostates as felt through the rectum, having good kidneys and bladder, are cases for enucleation, while very old men with slightly damaged kidneys, and prostates that do not feel very large on rectal examination, yet causing considerable urethral impediment, are cases for prostatotomy.

Age is important, as the older the patient the lower his resisting power, and the more liable he is to death from shock and asthenia, therefore in a very old man, if the prostate is of the right variety, a Bottini operation would be performed, and cases of men over 90 have been reported as having been operated upon by this method successfully. Old age, however, is not an absolute contra-indication to prostatectomy, as men over 75 years of age, having good kidneys, non-infected urine and a very large prostate, may undergo prostatectomy.

Regarding the size and shape of the prostate, it may be said that very large prostates, as felt per rectum, are favorable for enucleation. Smaller ones, that is to say in which there is not much enlargement on rectal touch, but in which there is a distinct impediment in the prostatic urethra on introducing the instrument, together with considerable quantity of residual urine, are best for prostatotomy.

It is impossible to tell how large a prostate is, although one experienced in this class of examinations has a decided advantage over others, for when added to a feeling of enlargement of the gland in the rectum we have that of an impediment in the posterior urethra as imparted to the sound or searcher, and are able to judge of the increased length of the canal by hooking its beak behind the middle lobe, as well as noting the amount of residual urine present and the distance to which we have to introduce the instrument to obtain it, we have a fair idea of the gland.

In cases in which the gland seems very large by rectum, and in which there is a urethral impediment at seven inches or more, and the urethra is lengthened, we can say that hypertrophy of the lateral lobes probably exists, but if the gland is small by rectum and a similar condition exists, we must think of a middle lobe being principally involved.

Cystoscopy tells us something of the contour of the base of the gland, although it is of little value in some cases, on account of not being long enough to enter the bladder, and in others because the surgeon is not able to outline distinctly the irregular vesical base.

Regarding the condition of the kidneys and bladder, it may be said that the bladder is the least important, because it makes no difference how badly inflamed it may be, treatment will do much to benefit it by means of internal urinary antiseptics and irrigations through a catheter. An involved bladder does not count so much against the operations as kidney involvement does. It is surprising to see how often a bladder can empty itself almost entirely after a prostatic operation even if it has been considered atonic before that time, and sometimes when years of catheter life have been passed. Diseased kidneys, however, whether medically or surgically involved, are always contra-indications to surgical interference on the prostate, as in such cases a post-operative renal congestion followed by uremia and death may take place. If then the kidneys are diseased and an operation demanded, a prostatotomy should be the one of choice, as statistics show that the danger is very much less.

I will endeavor to point out the operation which the surgeon should choose in performing a prostatectomy or prostatotomy by means of some illustrations of prostatic specimens. Figure 1.—We have a prostatic bar, acting as a dam against urinating. The gland is not much enlarged. It is a typical case for a Bottini operation, prostatotomy. Figure 2.—This is also a prostatic bar, but the lateral lobes are so enlarged that an enucleation by the perineal route should be performed, as it will be easy to reach them from below, and little could be accomplished by prostatotomy. In Figure 5, the lateral lobes are not much enlarged, but the middle lobe is very much so, and prostatectomy by the suprapubic method through the bladder would be much easier, as it can not be so well reached from below as from above. Figure 7.—Here the gland is not much enlarged, excepting in the left lobe, but the urethral floor of the prostatic urethra is elevated. We would encounter considerable difficulty in performing a prostatotomy, for after the incisor has been inserted in the bladder, the beak turned downward and the instrument drawn down in the median line as far as possible, it will be seen that it would not be over the prostatic urethra, but to one side of it, and the furrow burnt through the gland would leave an island in the center which might be pushed to one side, thus impinging upon the urethra. On the other hand, if the incision were not sufficiently long to meet the urethra below, it would simply result in a blind sac leading off from the bladder into the gland, as a result of which he would not have so good a urethra as before the operation. In such cases it will be necessary to perform a perineal section after a prostatotomy; to explore the prostatic urethra and the bladder neck thoroughly with the finger; stretch the parts, if necessary, and insert a large perineal drainage tube.

75 West 55th Street.

[The remainder of this Symposium, with discussion, will appear next week.]

The Cleansing of Floors.—Dr. Owen recommends a finish on hospital floors of wax, linseed oil, turpentine, floor finish and benzine in the following proportion: Wax, 5 pounds; linseed oil and turpentine, 2 gallons each; floor finish (permanere), 1 gallon, and benzine, 10 gallons. This is applied once a week and laid on with a piece of cotton, brushed and polished with a cotton mop. He believes that too much floor scrubbing is responsible for some of the sickening odors which are due to decomposition taking place both in and on the floors. The danger of fire from the use of this material is very slight if only a small quantity is kept on hand to use at a time.—*Phila. Med. Jour.*

AUTOPLASTIC SUTURE IN HERNIA, AND OTHER DIASTASES.—PRELIMINARY REPORT.*

L. L. McARTHUR, M.D.
CHICAGO.

Without entering into a discussion of the relative merits of suture materials possible or desirable, all of which can be found in our text-books, it shall be the aim of this brief and preliminary communication to show the feasibility as well as the desirability in certain situations of utilizing the patient's own living tissues as the resisting medium to future hernia. While at work with an inguinal hernial operation the idea occurred to me that it would be feasible to utilize a strip of the tendinous portion of the external oblique, which, possessing fibers in the adult from 5 to 6½ inches in length, would have sufficient strength to act as a substitute for the absorbable kangaroo sutures. Experiments on dogs and operations on the human being have proven to me the feasibility of the procedure; it remains for the future to determine the actual value of the suggestion.

Mentioning in passing the more pertinent of the autoplastic hernial procedures that have been recommended by various surgeons, in order that they shall not be confused with the present suggestion. This in nowise is intended (as are all the other methods) as an obturator to the inguinal canal. I would recall McEwen's treatment of the sac, as a pad at the internal ring, or Wölfler's autoplasty with the lower segment of the rectus muscle loosened from its sheath and drawn out to the position of the canal, or Poullet's dissection out of the tendinous insertion of the adductor magnus and grafting it upward into the canal, or Graham's similar treatment of the upper end of the Sartorius. Autopsies held long afterwards have demonstrated the complete absorption of the McEwen treated sac; while atrophy of the muscular structures utilized as obturators to the canal has been observed. The only suggestion similar to mine with which I am familiar is that which was made by Vulliet in cases of nephropexy, he being driven to this expedient when all other methods of suture, absorbable or non-absorbable, had given occasional failures. You will recall that in that position he recommended the dissecting out of a portion of the tendon of the longissimus dorsi, leaving its lower end attached. With this he perforated the capsule of the kidney, bringing the free end then into the wound for fixation. With such a living suture it was possible for him to have a permanent suspensory ligament. His recommendation has not met with the recognition it perhaps deserved, because, 1, in that situation it required an extra three and one-half inch incision above the usual wound, exposing the tendon at the transverse process of the first lumbar vertebra. 2. Simpler, equally successful, procedures came into use. In the case of inguinal hernia, however, the tissues lie immediately at hand; the skin incision need be lengthened but an inch to one and one-half inches, when the living tendons with their fixed bony insertion below can be separated in any desired size. It thus becomes an easy matter to utilize them for the suture of any hernial procedure; requiring, however, a running instead of an interrupted stitch.

Technique.—Any of the accepted operations, the Bassini, or the Andrews-Girard, operation can utilize this material without great variation in the technique. The skin and fat having been cut, exposing the external ring, the latter is prolonged upwards, the line of separation paralleling exactly the tendinous fibers of the external oblique muscle to its commencing muscular insertion. This divides the aponeurosis of the external oblique into an external and an internal flap, the cut edges of which can easily be raised from their contact with the internal oblique. The sac having been treated as the operator may

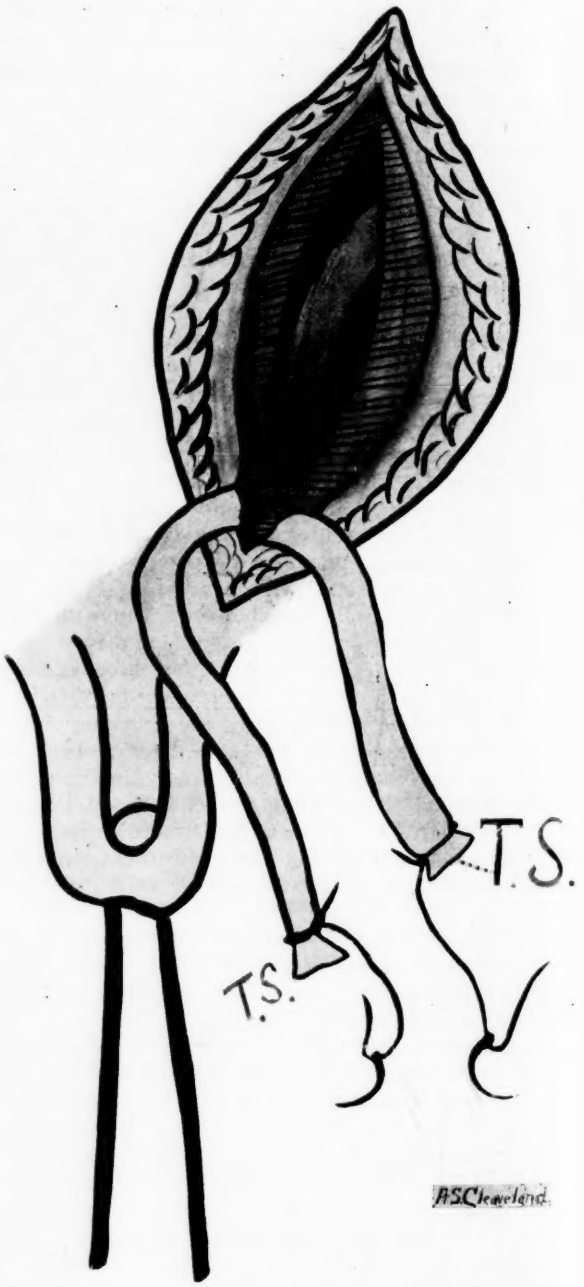

Fig. 1.—Schematic representation of two strips of tendon of external oblique, ready for suture; canal represented as opened; sac ligated and dropped back.

prefer (Duplay-Cazin) a bundle of those white fibers which enter into the formation of the internal pillar of the ring are then split off from the edge of the internal flap of the external oblique quite up to their insertion in the muscle belly, where they are cut loose from the muscle but left attached to the spine of the pubis. This strip should vary in width from one-eighth to four-sixteenths inch, according to the development

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: Drs. W. J. Mayo, H. O. Walker, and A. J. Ochsner.

of the tendinous fibers, which in children and women are not so strong as in the male adult. In case a Bassini is done, a similar strip is taken from the outer flap, the lower end of which strip terminates in the fibers of the external pillar of the ring. At this stage the opening presents the appearance of a shoe ready to be laced up. The operation is then completed according to the choice of the operator, a Bassini or an Andrews imbrication or a Girard, using these strips as

Fig. 2a.—Schematic representation of suture with "T. S." tendon strip for deep layer; inner flap to inner aspect Poupart's ligament. Artist has included inner flap of external oblique tendon as in Andrews'.

suture material for a running stitch. As an easy means of handling, and for the purpose of avoiding infecting the graft suture, a strand of No. 3 silk is tied (with a single knot) tightly to the free end, this silk threaded in the ordinary needle, and the tendon graft drawn through the tissues to be united, one for the deep row of stitches, the other for the superficial layer. The first stitch is so applied as to give the desired lumen to the new external abdominal ring, using the one terminating in the internal pillar for the first suture, the remaining one for the superficial layer of buried stitches. The end of the suture strip can be fixed by making a simple knot in it; but one or two stitches through and back as the tailor fixes his thread, will also serve the purpose. The treatment of the cord can be by either method that suits the operator's fancy—Bassini or An-

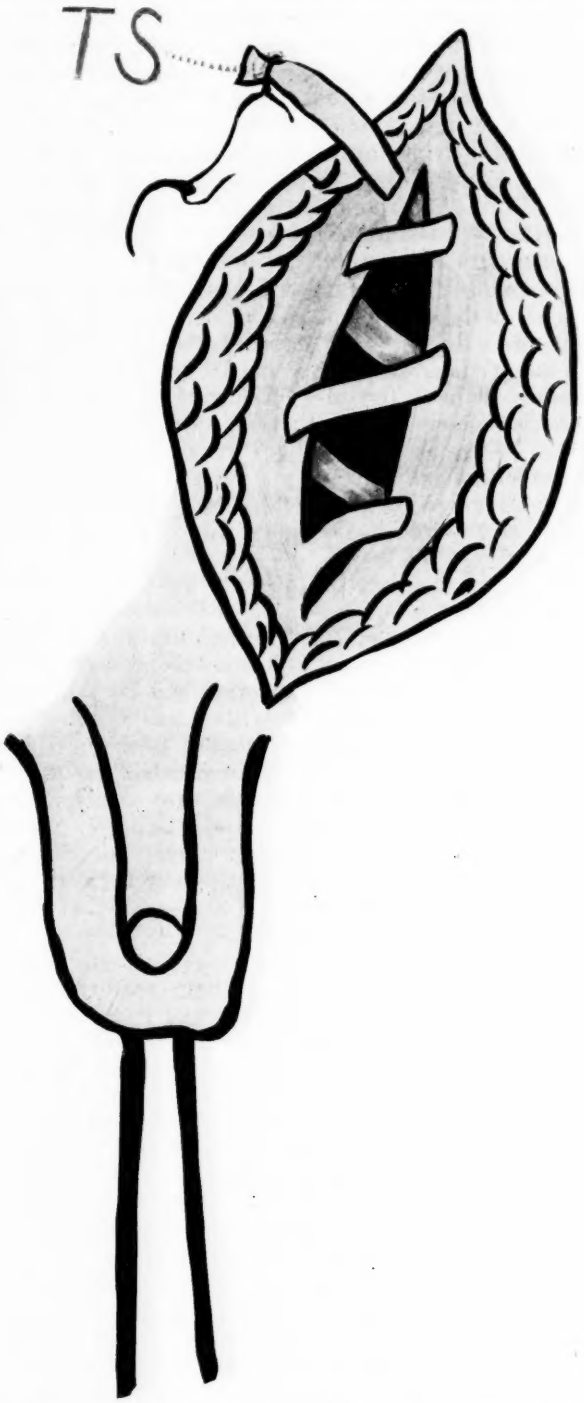

Fig. 2b.—Similar representation of suture with "T. S." outer flap to anterior surface of inner flap, when using Andrews' Edge-to-edge with Bassini.

drews. The skin and fatty layer can likewise be closed with the suture most in vogue with the person operating. The writer's practice usually has been with interrupted silkwormgut stitches, no drainage, and sealing with

iodoform collodion. While I have had a large number of hernial operations in the past, since commencing this method of suture I have had twelve[1] cases in which to try it, in all of which a perfect primary union was obtained, with an unusually satisfactory convalescence, the temperature not rising as it usually does during the absorption of the animal sutures, with in these few cases less than usual of the indurated boggy area surrounding the wound. Some of my colleagues have likewise tried the operation, making in all seventeen cases of which I have personal knowledge.

Realizing, as I do, how nearly perfect our absorbable suture material has now become, I should not have the temerity to present this paper did I not believe it to possess undoubted additional merits, viz.: 1, the obtaining of a living suture; 2, lessened chance of failure through avoidance of introduction of dead or foreign tissue; 3, the incorporation in the resisting cicatrix of organized white fibrous tissue; 4, the applicability of the same procedure to other situations.

By similar experiments with aponeurosis of external oblique of the dog, I am able to demonstrate that the tissue heals *in situ*, is not absorbed, does not slough, and I present microscopic specimens thereof in verification. Animal ligatures dissolving in one to two weeks no longer exert a retaining influence, while these grafts living, as white fibrous tissue largely does by imbibition, remain permanent. Indeed, the well-known heteroplastic tendon grafting for loss of portions of tendinous structures should teach that this graft should likewise.

It will at this date be generally accepted as true, I think, that failure of cure in hernial operations by any of the recognized methods is practically always due to associated infection, for the Bassini, the Andrews or the Girard unassociated with infection, can be said to be practically always successful. Inasmuch as these accidental infections are usually traceable to the buried sutures, if by any means we can eliminate their use, we lessen chances of failures. In the case of non-absorbable sutures like silk or silver wire, it is not an uncommon experience to have a primary union and yet a year or longer afterwards to have a patient return with the auto-infection of a stitch successfully buried that length of time and requiring removal.

Whatever the method of operation, McEwen, Bassini, Andrews or Girard, the success of the operation is dependent upon the formation of a cicatricial connective tissue between the apposed surfaces retaining them where placed. McBurney's demonstration of the occasional unreliability of this cicatricial material as a resisting medium in hernia teaches us that occasionally we must expect failures because of this very yielding of connective tissue. Could we, however, by any means incorporate in such a cicatrix such white inelastic tissue as these tendons present, especially when interwoven as a running suture is, then we can certainly feel more confident of its permanency and unyielding character.

In very young children, and some women, the tendon of the external oblique is sometimes so poorly developed that I am convinced that this method of suture will not be applicable to every case, and have refrained from trying it under these circumstances. As to the tensile strength of strips of tendon of sufficient size for use as suture material, this can be said, that they withstand a tensile strain of from 11 to 24 pounds without breaking.

1. The number has since increased to twenty.

Sufficient time has not elapsed since any of my operations to state that the method is any more successful than with animal sutures. It is logical to conclude however, that if the identical technique is followed, using these living strips as is followed with aseptic animal tendons, and a primary union with normal convalescence is obtained, that if they die and be absorbed, they accomplish all that the foreign material does, while if they live (as experiment proves) it remains to offer permanent resistance to future stretching.

Experiments are now in progress by means of which, after the lapse of sufficient time, I shall study the histological changes, if any, which grafts of this nature may undergo, and hope to have the honor of presenting to this Section the findings.

DISCUSSION.

DR. C. A. POWERS, Denver—We all know how useful and popular is the modern operation for the radical cure of inguinal hernia, and every addition to our technic is welcome. Dr. McArthur has presented this simple matter in a very plain and modest way, and I personally believe that it is very well worthy of trial. I shall make use of it for I think it promises to be an addition to our methods.

DR. D. N. EISENDRATH, Chicago—I do not know whether the Doctor has had any children among those whom he has operated on. I tried it in a child and was surprised to find, in a boy of 10, the tensile strength of the aponeurosis of the external oblique, which suffices to close the hernial canal. The only trouble I had at that time was the method of closing the suture, which was afterwards explained to me by the Doctor as the splitting of the tendon and then separating the two ends to tie them together. That was the chief difficulty. Everyone is surprised at the great annoyance of having suppuration, and in these cases it is certainly a great addition to our technic, where we have animal tissue.

DR. J. R. EASTMAN, Indianapolis—With regard to the suture strip that Dr. McArthur splits off I would like to ask how it happens to be so much longer than the wound in the aponeurosis of the external oblique. I wish to ask further if he has encountered cases in which the aponeurosis was so thin and delicate that the edge was split off where he has applied this tissue as ligature material. The autoplastic suture has considerable breadth and must involve some splitting of the aponeurosis of the external oblique, as it is introduced to close the wound. It appears that there would be some danger in this direction, and I would be glad if the Doctor could throw some light upon this phase of the matter.

DR. G. F. SHIMONEK, Milwaukee—It seems to me that since these autoplastic sutures represent a tissue which, histologically, is rather of low vitality, as all white fibrous tissues are, their existence must be very greatly limited. In order to oppose the adjoining edges it is necessary to put these sutures on the stretch, thus devitalizing them more or less completely; the result will be a complete absorption of the sutures, probably in as short a time as it takes to absorb plain catgut. Having had no experience with this method I can only say that I imagine it inferior to silkwormgut, kangaroo tendon or formalized pyoktanin catgut, because those tissues upon which the permanency of our results, in hernia, depends, are composed of fibrous tissue which requires to be held much longer in close approximation than do structures of higher vitality.

DR. MCARTHUR, in reply—The strips have been exaggerated in length in the drawings. One knows the length from the anterior spine up to the external oblique belly. It is a good length, in some, as I said, even six inches. The strips again are represented as flat. That is a representation which is not found as soon as they are loosened. When they are loosened they roll up as catgut does, and therefore pull through as does catgut and do not make a long stitch wound in the edge of the external oblique any more than the catgut or any suture material does. The edge I have not found to tear out more than it does in using any other suture material. I recall one

case in which it did tear out. I want to report a case that was operated on by this method, in which a death occurred on the fourth day from a total suppression of urine. I want to report it, because it presented that rather rare type of hernia —necessitating a prolonged operation—because I did not recognize for some time I had to deal with what is spoken of as the "sacless hernia" (*hernie par glissement*), made possible by the fact that in certain cases the anterior aspect of the colon is only partially covered by peritoneum; a large portion of its outer posterior aspect is uncovered by peritoneum. This sometimes slips down and presents in a hernial ring. When you cut down on the mass, you look in vain for a peritoneal covering; still you feel the gurgling within, find the contents of the bowel and know that you are close to it—you find no peritoneum; or until you pull it down, you do not find any peritoneum. It was so in this case, a man 62 years of age, who was a peddler, urging that he be operated on, because he had to jump down from his wagon and could not keep this hernia up with the truss. I concluded to operate, and he died, without any doubt from a too prolonged anesthesia for a man of his years; the total suppression of urine proved it, I think. It was not possible to get a postmortem. It was, however, possible in the night for my house surgeon to cut out the segment which had been sewed, showing the tendon *in situ*; microscopical sections of which are being made.

THE COSMETIC AND VISUAL RESULTS IN SQUINT.*

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Since Donders first promulgated the statement that strabismus convergens always depends upon hypermetropia, to the present time, the study of the etiological factor or factors concerned, has been one of ever-increasing interest; yet much still remains unknown and unsettled in our knowledge of this complex condition. A step was taken forward when it was proven beyond question that there must be a something besides hypermetropia to determine a squint. Schweigger, Stilling, Hansen-Grut, Wahlfors and others have attacked the subject, but no one theory explains all the features sometimes encountered.

The early age at which squint usually shows itself adds much to the difficulties of our gaining knowledge of the pre-existing conditions. The best way to approach the subject is by a careful study of cases. In doing this we often encounter phenomena that can not be explained by any of the ideas yet advanced.

Leaving to others a discussion of the theories underlying squint, I have chosen to address myself to a practical consideration of the visual as well as the cosmetic effect gained by the different methods of treatment. In order to do this I have selected 100 cases of convergent strabismus that have been under my personal care in private practice during the past four years. I have excluded all cases where a visible diseased condition such as corneal, lens or vitreous opacities of fundus changes were present. Each case has been under observation for several months, and a careful test of the vision made when possible; and the refraction determined either by subjective or objective tests under the influence of a cycloplegic (usually atropia).

The ideal result from the treatment of squint would be that which, while bringing about parallelism of the visual lines, would at the same time improve the vision in the defective eye, and produce binocular single vision in all portions of the field of fixation. Were these ends obtainable in all cases the chapter on squint could be closed. The studies and writings of Javal, Priestley Smith and others have aroused a fresh interest in the question of improving the vision in the amblyopic eye and lessening the squint by the so-called educative treatment.

Of the 100 cases selected for this study, 76 were cases of monolateral squint, in all of which the squinting eye was defective in visual acuteness; 24 were cases of alternating squint, in which the visual acuteness was practically the same in each eye. Of the 76 cases of monolateral squint, in 21 cases, or 27 per cent., who were old enough to answer to the subjective test, improvement in the acuteness of vision in the amblyopic eye was obtained by correction of the refraction. In these cases the vision was first tested, then a cycloplegic was instilled, and the correction ascertained both by objective and subjective tests. After adaptation of the correcting lens, which was as near as possible a complete correction, a test was again made with the pupil in its normal condition. The following results in the 21 cases were shown: 1 case was improved from excentric fixation to 14/200; 1 from 18/200 to 20/200; 4 from 20/200 to 20/100; 2 from 20/200 to 20/70; 1 from 20/200 to 20/50; 1 from 20/200 to 20/30; 2 from 20/100 to 20/70; 3 from 20/100 to 20/50; 1 from 20/70 to 20/50; 3 from 20/50 to 20/40; 1 from 20/50 to 20/30, and 1 from 20/40 to 20/30.

The amount of hypermetropia present was as follows: 2 cases with 1 D.; 3 with 2 D.; 7 with 3 D.; 5 with 4 D.; 2 with 5 D.; 1 with 6 D., and 1 with 4 D. of simple hypermetropic astigmatism. In 6 cases astigmatism of from 1 to 3 D. was combined with the hypermetropia.

The improvement obtained in these cases was always apparent shortly after the lenses were adjusted, and is, I believe, a result of the lessened eye strain due to the formation of a more distinct image on the retina brought about by an accurate correction of the refraction error, and not to direct improvement in the perceptive powers of the retina. This same improvement is often noted in one-sided amblyopia without squint where the hypermetropia and astigmatism have been corrected.

More recent writers seemingly having taken the cue from the authorities noted, have gone even farther, and now we almost daily read of cases of squint with high amblyopia and excentric fixation in which a correction of the defect in refraction and exclusion of the fixing eye has brought the vision of the defective one up to the normal standard of acuteness. Senn, in a recent article in "Wochenschrift für Therapie und Hygiene des Auges," reports ten cases in each of which the amblyopic eye improved under forced use, while in two of these the good eye deteriorated as a result of the exclusion. That isolated cases of marked improvement in amblyopia are encountered can not be denied. The reported cases of Johnson, Javal and others are conclusive, but in my experience I have not observed such results. One case where the amblyopic eye was forced to do the work of the former fixing eye has been under observation: A boy 16 years of age presented a squint of the right eye with amblyopia. A corneal ulcer produced a large central opacity on the left or fixing eye; the right then became the useful eye, and while under observation for six months the vision did not change from 20/70.

All will admit that when a squint is corrected, of scarcely less importance than improvement in the acuteness of vision in the amblyopic eye, is the attainment of

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binocular single vision. It is a frequent observation that parallelism of the visual axes is obtained so that when distant objects are fixed, pictures of the object are focused on functionally corresponding points of each retina, and yet the power of blending these images into one is absent in the brain. The advocates of the early training of the squinting eye argue that the development of this fusional faculty is the keynote to successful treatment. In a majority of the cases of squint coming under observation the youthfulness of the subject precludes the possibility of such training. In order that this end may be accomplished diplopia must first be produced, and then the two images united; whether one eye be amblyopic, or the visual acuteness equal, the production of double images is difficult and sometimes impossible. Often in those in which it can be brought about it can not be maintained for a sufficient length of time to estimate the separation. The cases of alternating squint seem to keep up a constant shifting from one eye to the other, making it impossible to hold the double images.

The absence of the power of binocular single vision seems not to be influenced by the presence of amblyopia. In a large majority of alternating squints it is absent; on the other hand, in 50 cases of congenital amblyopia without squint observed, binocular fusion was present in 90 per cent. of the cases, but often high degrees of heterophoria were encountered. In only 7 of the 100 cases under consideration was I able to produce binocular blending of the images so as to gain the sense of perspective. Of these 7 cases 4 were alternating squints in which parallelism was produced by operation. This operation consisted in one case of tenotomy of both interni at intervals; in 3 cases tenotomy of one internus with advancement of the externus. The 3 remaining were monolateral squints in which binocular single vision was obtained by correction of the refraction by glasses, the amblyopia in the squinting eye was not extreme. In 5 cases only have I been able to get the patient or their parents to carry out the procedures advised by the advocates of the educative method of excluding the good eye for a number of hours daily. In only one of these was any apparent effect produced. This was a child of 3 years of age; the mother carried out faithfully for two years my instructions. There was present 6 D. of hypermetropia. Under glasses and the exclusion-pad used daily for several hours the vision improved from excentric fixation to 12/200, and the convergence lessened from a squint of 6 mm. to 2 mm. and the fixation has apparently become central. One other case watched carefully was a boy of 9 years, in which the parent insisted that the instructions had been faithfully carried out. After eighteen months the eye with excentric fixation remained in the same condition. The methods used were those advised by Priestley Smith: Exclusion of one eye, bar-reading and the stereoscope. The use of the stereoscope in my experience in children has not accomplished anything; and bar-reading seems to be of no value in alternating squint.

When studied from a purely cosmetic standpoint success in the treatment of strabismus offers much encouragement. In practically all cases we can expect to produce a lessening of the deformity by glasses or tenotomy. Glasses should always be given a thorough trial and no operation resorted to until all the effect possible has been produced thereby. Of the 100 cases under study the following are the results produced in lessening the deformity by accurate correction of the refraction: 43 cases showed a decided lessening of the convergence; in 60 per cent. of these, or 26 per cent. of the entire number of cases, the result was parallelism of the optic axes. Of these 26, 23 were monocular squint; 3 alternating. Therefore, the percentage of cases of monocular squint cured by glasses was 30 per cent., of alternating squint 12 per cent. The result of operative interference is shown as follows: 41 cases were operated upon; 12 cases, or 29 per cent. of parallelism, was obtained; 15 cases, or 36 per cent., were improved; 14 cases, or 34 per cent., were not improved. In 3 of these latter divergence eventually became apparent. Of the 24 alternating cases 15 were operated upon; 7, or 29 per cent., were cures; 5, or 20 per cent., were improved. In 2, divergence was eventually noted. In these cases no perfect cosmetic results were obtained by simple tenotomy of one internus. Division of both interni at intervals, or tenotomy of an internus combined with advancement of an externus was necessary to bring about the desired effect.

It has been my observation that in all cases of alternating squint there is a decided weakening of the power of abduction and that simple tenotomy does not lessen the squint more than 2 mm. Alternating squint seems to present a much more difficult problem to solve than does strabismus with one-sided amblyopia. A smaller percentage are relieved by glasses. Simple tenotomy of an internus produces a much more uncertain result, and fusion of the images of the two eyes is more difficult. If training the amblyopic eye in a monolateral squint, before first accomplishing parallelism of the optic axes, improves its powers of perception, we may transform a monolateral into an alternating squint; and as far as its correction is concerned the last condition of the patient is worse than the first.

From a cosmetic standpoint the ideal squint operation is that which will produce parallelism of the optic axes and leave behind no ugly depression due to the sinking of the caruncle at the inner canthus; nor limited motion of the eyeball when making excursions in different directions.

The statement that binocular vision is necessary to maintain the cosmetic result does not hold true. I recently examined a young man 23 years of age, with the following history: When 7 years of age he was operated upon for convergent strabismus by tenotomy of both internal recti. No glasses were ordered and no measurement of his visual acuteness undertaken. At the age of 12 years he came under my care; tests at that time showed great amblyopia in the right eye. Under atropia I found only 1 D. of hypermetropia in each eye. A few weeks ago I again examined him. There is no binocular vision. He wears +.50 D. S. each in close work. His eyes are parallel. The cosmetic result is good. The excursions of the eye are not restricted, and beyond a slight sinking of the caruncle in the amblyopic eye, no evidences of the former squint are apparent. He has taken a regular college course and is a scholar of recognized ability.

Some of the statements I have made may appear dogmatic and at variance with the opinion of others, but they are based entirely upon my personal observation and the knowledge gained from the cases chosen for study. Many other points were noted that have not been considered: such as heredity, and the frequent encountering of amblyopic individuals in the families of those who squint. Alternating and monolateral squints will be found indiscriminately in squinting families, showing

that there is an unknown something common to both forms. Spontaneous cures in squint are not as uncommon as we might expect. We can find such a history often in cases classed as congenital one-sided amblyopia. The following points, it seems, should be emphasized:

1. The effect gained in the treatment of strabismus, whether parallelism of the visual axes be obtained by a cycloplegic, glasses, orthoptic exercise, or an operation, is largely, or we might say, wholly cosmetic.

2. Glasses should be adjusted to the eyes of squinting children at as early an age as possible, depending upon the ability of the parent to control the child; and they should always be worn for a sufficient length of time to determine their effect upon convergence, before any steps in the way of an operation are undertaken.

3. The use of the exclusion-pad and orthoptic training are advisable, not so much in the hope of increasing the vision in the squinting eye, as to improve the power of co-ordination in the recti muscles, so that when the child reaches the proper age for operation the power of simultaneous muscle action will not have been lost.

4. Binocular single vision is not present in more than 3 per cent. of cases of squint, and its production in a larger percentage uncertain and unsatisfactory. Parallelism of the visual lines does not mean binocular single seeing.

5. Double images are not necessary for a successful issue. Cosmetic results can be obtained and maintained where the fusion power is absent. This is true in monocular squint with great amblyopia as well as in the alternating form.

6. Congenital amblyopia is often found in eyes that do not squint, especially combined with hypermetropia and astigmatism, and often in members of a family where squint in others is present.

7. In alternating squint if the hypermetropia is of a high degree the chances for producing parallelism are better than when the hypermetropia is low. In alternating squint with hypermetropia of a medium degree the necessity for an operation and the difficulties of producing parallelism by tenotomy are greater than in monolateral squint.

8. The effect of a tenotomy is greatly influenced by the amount of abducting power present in the corresponding externus. This should always be especially noted in the alternating variety.

9. Two tenotomies on the same internus is bad surgery, since it invariably leaves a sunken caruncle and later divergence.

10. From a cosmetic standpoint the correction by operation is not as simple as might be supposed. What is gained by straightening the eye, if there is left a noticeable exophthalmos with limited motion of the eye both outward and inward?

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Intermittent Pernicious Anemia.—Foustanos describes in the *Grèce Médicale* for June, a case of intermittent pernicious anemia. The hemolysis occurred for seven to ten days, and then seemed to be arrested for a time, while the tumefied spleen and liver retrogressed nearly to normal size during the intermissions. He accepts this case as evidence that pernicious anemia is not a disease of the blood-forming organs, but is the result of the action of some unknown toxic substance in the blood, occurring principally in the hepatic and splenic regions.

STRABISMUS; ITS TREATMENT.*

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If some one were good enough, or I might better say wise enough, to formulate a uniform set of tests for the detection and accurate measurement of strabismus, to be used by all observers in order to compare the results or the different methods of treatment, we might arrive at some valuable conclusions as to the best treatment of this affection. Again, a better understanding of the physiological action of the ocular muscles and, indeed, of physiology in general than now, as a rule, obtains would help elucidate the intricacies of the subject. The anatomy of the ocular muscles has been gone into thoroughly, but the physiological action of the ocular muscles and their intimate relation and co-relation in the use and movements of the eyes has been overlooked, or at least not kept in mind, it seems to me. In addition to a résumé of the subject of the treatment of strabismus, therefore, I shall call attention to these two points in particular, to-wit: The different tests for strabismus, and the physiology relating to the subject. In addition also I wish to call attention to the Panas operation for strabismus with table of cases.

Physiology.—Of course, this paper is entirely too brief to go into extended observations on the physiology of squint, but there are two or three points of importance I wish to bring before you for consideration. Incidentally, I may say, I include the insufficiency of the ocular muscles under these remarks, because an insufficiency is nothing but a latent squint, which may be easily forced into a manifest squint by the use of prisms—a practice which, I am sorry to say, is followed by some of my American colleagues. If we are to obtain the best results in the treatment of strabismus, either manifest or latent, we must bring to bear a knowledge of the physiology of the muscles and nerves in general. for an insufficiency or weakness of an ocular muscle differs in no particular in a physiological way from an insufficiency or weakness of any other voluntary striated muscle. For it is a well-established fact of physiology that the nerve-cells give out before the muscles. "It is undoubtedly of advantage to the body," says Warren P. Lombard,[1] "that the nerve-cells should fatigue before the muscles, for the muscles are thereby protected from overwork."

Now, in an insufficiency or weakness of any ocular muscle, the specialist—the ocular-muscle specialist, in particular—is prone to forget this general and most important physiological fact, and begins to treat the muscle itself locally by prescribing prisms or performing graduated tenotomies of the opposing muscles, or some other equally absurd procedure; failing to recognize that it is the nerve-cells which are fatigued, weak and at fault and in need of treatment. And this treatment, in the main, should be through increased nutrition, by means of tonics, rest, outdoor exercise, and by local treatment. The local treatment should consist of the proper correction of the error of refraction, and by having the patient turn the eyes forcibly in the direction of the weak muscle or muscles several times a day. Perhaps the local exercise of the weak muscles by means of prisms for a

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1. An American Text-Book of Physiology, 1900, p. 78.

few minutes at a time each day may be a benefit in some cases, especially in cases that have been operated upon. In my own experience, however, this has not been very satisfactory. The practice of prescribing prisms for constant wear, except in paralytic squint, or in case of anatomical insufficiency (due either to faulty development, insertion or enervation of the muscle) should never be followed, because the weak muscle is made weaker and the strong muscle made stronger all the time, until the latent squint is made a manifest one. I have seen this occur more than once. The gentlemen who prescribe prisms for constant wear for insufficiency of the ocular muscles, and do not follow them up with stronger prisms, and, finally, with graduated tenotomies of the opposing stronger muscles, do not follow their treatment to a logical conclusion. For it has been demonstrated innumerable times that prisms, when worn with their bases over weak muscles and their apices over the opposing stronger muscles, make the strong stronger and the weak muscles weaker. In fact, increasing the strength of these prisms every few days or weeks, to bring out the extra strength of the strong muscles is the very method pursued by the men who perform graduated tenotomies. The gentlemen who prescribe prisms for physiological insufficiencies should follow up the first pair with the second, and a third and a fourth, if necessary, and finally perform tenotomies, or abandon the practice altogether, with the exception above noted, that is, in anatomical insufficiency or in paralysis of the ocular muscles.

Neither the constant wearing of prisms nor graduated tenotomies are the correct treatment in insufficiency of the ocular muscles or latent squint, but general treatment as above indicated, together with the correction of the refractive error, is the more rational procedure. This is certainly a common-sense method, and assists in the restoration of normal physiological action to the muscles through increased nutrition to the nerve cells. In weakness of the ocular muscles, just as in weakness of the muscles in general, we should, as Lombard well says, "Always bear in mind that though 'beef' is of use to the athlete the muscles are merely the servants, and can accomplish nothing if the master is sick. The nerve cells always give out before the muscles, and the man preparing for a contest should watch his nervous system more than his muscles."*

If the treatment of latent squint by means of prisms and graduated tenotomies is of little practical value, how much less so is the treatment of manifest squint by these means. In fact, the treatment of manifest squint by means of prisms, or by graduated tenotomies, has been abandoned by most oculists, and, at most, is but a sad memory to those who have tried it.

TESTS FOR STRABISMUS AND THEIR RELATIVE VALUE BEFORE AND AFTER OPERATION.

Perhaps the most important step in the treatment of any disease is finding out the exact nature and extent of the disease; in other words, properly diagnosticating the disease. We have a number of tests for measuring squint, its nature and amount more or less exactly; but unfortunately, many of these tests can not be used in very young subjects, a class in which the majority of squint cases are observed. I shall describe at this point the principal tests for squint and their method of application, and after that give the technique of a routine examination bringing into requisition the different tests in the order of their importance, hoping thereby to establish what might be termed a standard examination for strabismus. Of course, this routine examination should not be made in exactly the same manner in every case, as there will be exceptional cases and individual peculiarities that will demand a modification to a greater or less extent of the method. But this routine examination should be followed as closely as possible in every case if we are to have a standard by which to compare the results of different treatments, and ultimately to select the best method of treatment as found out by this method of comparison. Uniformity of tests in these cases of squint is all important.

1. In latent squint or ocular insufficiency, the most reliable test in my experience is that made with ordinary prisms for adduction, abduction and sursumduction, etc., as follows:

To obtain the power of adduction, have the patient look at a candle-flame 20 feet distant, with both eyes open and any refractive error he may have properly corrected; then begin the test with the one degree prism, apex inward, that is, toward the nose and increase the strength of the prism until the patient sees double. The strongest prism he can overcome without seeing double measures his adduction.

The abduction is obtained by placing the apex of the prism outward toward the temple, and gradually increasing it till the patient sees double; while the sursumduction right and left is obtained by placing the apex of the prism upward in front of the right and left eye respectively, and increasing the strength till the patient sees double.

J. M. Bannister, in testing 100 soldiers with normal eyes, found the average adductive power to be 14.1 degrees, abduction 7 degrees and sursumduction 2 to 4 degrees, the relative strength of adduction to abduction being two to one. Any wide deviation from this relation, especially when asthenopia is complained of, should be considered as an insufficiency and should receive treatment as indicated in the first part of this paper.

2. The Maddox-rod test for muscle insufficiency is practiced by many oculists, but in my experience it is not as reliable as the simple prism test. Besides, it has the same fault as the old Graefe test for muscle insufficiency, that of causing a diplopia as the first step in the test for insufficiency. This is a serious mistake as it takes away from the eye the stimulus for fusion of the images.

There are a number of tests for manifest squint, the principal ones of which I shall now describe:

1. *Perimeter Test.*—This is the best test for squint that we have, but unfortunately it can not be used accurately on patients under 5 or 6 years of age. As the majority of all squints are of a convergent nature and as about 40 per cent. occur in children under 6 years of age, it will be seen what a serious handicap this is. This test is made as follows:

Place the patient at the perimeter with the squinting eye in a line with the center of the arc, which should be in the horizontal position; have the patient look directly in front of him at a light or some small bright object 20 feet distant. Now carry a lighted candle along the arc of the instrument until the image of its flame occupies the center of the cornea of the squinting eye. Read on the arc the number of degree the candle is from the center of the arc. This is the degree of the squint. For example, say the candle is carried to the twenty-degree mark on the arc when the image of its flame occupies the center of the cornea of the squinting

*Loc. cit., p. 76.

eye. Twenty degrees is the amount of the squint, convergent or divergent as the case may be.

In vertical squint the arc of the perimeter should be placed in the vertical meridian, and while the patient looks in the distance the candle should be carried along the arc from its center until the image of its flame occupies the center of the cornea of the deviating eye. The position on the arc at which this happens indicates the amount in degrees of the squint.

To get the amount of the squint for the near point have the patient look at the center of the arc and move the candle along the arc in exactly the same way as before as in testing for the distance. The position on the arc at which the image of the candle flame occupies the center of the cornea of the squinting eye measures the amount of the squint. I have found the amount of the squint for the near point, in convergent squint, as a rule, to be two to five degrees greater than for the distance, due perhaps to an act of the accommodation.

2. *Cover or Screen Test.*—Have the patient look in the distance at some small object, as a candle flame; stand in front of the patient with the head lower than the patient's so as not to obstruct his view, cover the patient's good eye with a card and have the patient fix the candle flame with the squinting eye. Now place the strabometer of Laurence against the lower lid with the zero mark on a line directly under the center of the cornea of the uncovered eye; then remove the card from the good eye, when the patient will fix the candle with it and squint the bad eye as usual with him. Note on the strabometer the number of lines the center of the cornea of the squinting eye has moved from the zero mark. This gives the angle of the squint. The advantage of this test is that it can be applied in very young children.

3. Priestley Smith's *Tape Measure Test.*—This consists of two pieces of tape, one black and one colored, each one meter in length, and attached to a ring which can be slipped over the thumb. The colored tape is divided by lines into twelve parts, and numbered 5, 10, 15, etc., up to sixty degrees, ending in a small weight to keep it taut during measurements. The patient holds the end of the black tape against his face directly under the squinting eye, while the observer stands directly in front of him with the ring attached at the other end of the tape over his thumb or ophthalmoscope which he holds in front of his eye. The patient looks directly into the ophthalmoscope from which a light is reflected into the squinting eye. It will be noted that the image of the light from the ophthalmoscope will be to the other side of the center of the cornea in convergent squint and to the inside of the center of the cornea in divergent squint. The observer now takes hold of the colored tape at the ring, the edge of the hand being held towards the patient for the patient to look at, and lets the tape slide between his fingers, carrying it in a direction opposite to that in which the eye squints. Both eyes should follow the hand, and when the squinting eye has turned sufficiently for the image of the light from the ophthalmoscope to occupy the center of the cornea in that eye, stop the hand and note the distance it has moved along the tape. The number on the tape indicates the degree or angle of the squint.

This test is accurate enough for all practical purposes, and if the angle alpha is taken into account it is quite reliable. Then it has the great advantage that it can be used on very young children.

4. *Hirschberg's Test.*—This test consists in estimating the angle or amount of the squint from the position of the image of the candle flame reflected from the front of the eye. The candle is held about one foot in front of the patient who has both eyes open. The image of the flame in the eye that fixes will be in the center of the cornea, while the image on the squinting eye will be more or less eccentric according to the amount of the squint. With the average-sized pupil, 3.5 millimeters, if the image is half way between the center of the pupil and the pupillary margin the squint is less than 10 degrees; if at the pupillary margin, 12 to 15 degrees; if midway between the margin of the pupil and the corneal limbus about 25 degrees; if at the edge of the cornea 45 to 50 degrees; if out on the sclera 60 to 80 degrees.

Of course the angle alpha should be taken into consideration in this test. This test is not very accurate but sufficiently so for practical work. It has the great advantage of application in very young subjects.

5. *Linear Measurement Test.*—This test is to be recommended only in case of false fixation. Have the patient look directly in front of him with both eyes open at a small object in the distance. Mark on the lower lids with ink a dot on a line with the outer border of the corneæ. Then measure the distance of the dots from the outer angle of the eye on each lid respectively. The difference in millimeters gives the amount of the squint.

6. *Prism Test.*—This test is applicable in those cases only where binocular vision exists. In recent cases where this condition sometimes obtains, and in cases where binocular vision has been brought about by treatment through improvement of the vision in the amblyopic eye and by bringing the images in the two eyes closer together (to get which latter condition this test itself is often employed), the prism test is of much value. It is applied as follows: Have the patient look at a candle flame 20 feet distant. Note the nature of the diplopia, if homonymous, cross or vertical; or if a combined deviation, by placing a red glass in front of one eye—the better one. In fact, it is often necessary to put a colored glass in front of one eye in order to establish a diplopia. Where the diplopia is present without a colored glass in front of the eye, the colored glass should be removed after the nature of the diplopia is established. The strength of the prism that is necessary to bring about single binocular vision divided by two represents the amount of the squint. For example, say we have a horizontal homonymous diplopia and that it requires a 20-degree prism apex inward to produce single binocular vision. This shows a convergent squint of 10 degrees. Again, say we have a horizontal cross diplopia which requires a 20-degree prism apex outward to cause single binocular vision. This shows a divergent squint of 10 degrees.

For establishing the fact whether single binocular vision does or does not exist, the prism test is invaluable. It is not altogether reliable as to the amount of the squint, exaggerated amounts being shown by it as compared with the perimeter test. I have seen the perimeter test show a squint of 10 degrees and the prism test immediately—in the same case—show 25 degrees. The cover or screen test also often gives an exaggerated amount of squint as compared with the perimeter test, especially in those cases where the squint is almost corrected and where binocular vision is present. There is a stimulus and a desire for fusion of the images in these cases, and when the screen is placed in front of one eye it at once eliminates this factor, and the result is the deviation of the eye behind the screen—to an exaggerated degree. With the perimeter test

both eyes are left open and the desire for fusion of the images is not disturbed, and a more correct test is possible. Therefore, in every case where the perimeter test can be made it should be used in preference to any other test.

Hirschberg and Landolt have charts to hang on the wall by which the angle of the squint can be measured, but they are of service chiefly in paralytic squint (which is not under consideration in this paper), and in squint cases where binocular vision exists. In ordinary strabismus these tests are not very satisfactory.

The above tests should be tried in the order given, the perimeter test in all cases where it can be used, the screen test, the tape measure test, prism test, etc. Two or more of them at least should be tried, in order to ascertain accurately the amount of the squint.

NON-OPERATIVE TREATMENT.

This consists in the use of atropin, atropin and glasses, the exclusion pad, the stereoscope, and bar-reading. It should be tried in every case of strabismus before any operation is undertaken, and should be continued in as long as the squint continues to improve. When improvement ceases by this method then it is time to operate. The different steps of the non-operative treatment are as follows:

1. *The Exclusion Pad.*—This consists in tying a patch over the good eye in order to make the patient look at objects with the squinting eye, which usually has poor vision, especially if the squint is constant, unilateral and of long duration. In this way the patient does not lose the faculty of locating or fixing objects with the squinting eye, and at the same time maintains and develops to a marked degree in some cases, as above quoted, the vision in the squinting eye. In cases of alternating squint, that is, where the patient first uses one eye, then the other, the faculties of vision and fixation are usually good and equal in each eye, being maintained as I believe simply by the use of first one eye and then the other. Therefore, following the plain lesson set by nature in these cases of alternating strabismus, we should, in cases of constant unilateral strabismus, where they can not or will not voluntarily use first one eye and then the other, make them do so by excluding the good eye from vision with a pad a certain number of minutes or hours each day.

2. *Mydriatics.*—A mydriatic, usually atropin, is used in the treatment of strabismus in order to paralyze the accommodation, and indirectly to act on the convergence. For, anything that relaxes the accommodation, relaxes at the same time and within certain limits the converging power of the eyes, the connection between the two functions being intimate.

The strength of the solution of atropin to be used depends on the age of the patient. In young children one-half to one grain to the ounce solution is quite strong enough. In older children (over 4 years of age) two to four grains to the ounce solution may be used. The parents are to be cautioned as to any poisonous symptoms of the drug, as flushed face, dry, hot skin, and dryness of the throat, and instructed to stop its use if these symptoms appear. Where an idiosyncrasy exists for the drug it can not be used at all; then some other mydriatic, as duboisin, must be substituted. One drop of the solution should be instilled into each eye twice a day and this to be kept up for one month, when it should be intermitted for that length of time. This should be repeated two or three or even four or five times according to the progress of the case. In divergent strabismus, atropin is contra-indicated, but may be used to ascertain the refractive error after which it should be discontinued.

3. *Glasses.*—Glasses help to correct convergent strabismus in two ways: 1. They improve the vision by correcting the refractive error, especially if astigmatism is present, if the squint is not of too long duration. This gives a stimulus to use the eyes together. 2. The glasses, by taking the strain off of the ciliary muscle, lessen convergence in exactly the same way as mydriatics do by relaxing the accommodation. Many cases of convergent strabismus are relieved by the use of atropin and glasses alone if taken early. And, if the exclusion pad is used in addition, it greatly increases the chances of recovery without operation.

Usually in fitting glasses I do not use a mydriatic of any kind, but in strabismus cases I always use a mydriatic, because it helps directly to improve the squint and at the same time allows almost full correction to be given the patient to wear; not only this, but as most of these cases are under 6 years of age and can not be tested subjectively, that is, by the trial case and test card, it makes the objective test easier and more accurate.

When divergent strabismus is present in hypermetropic eyes, no glasses should be worn except to correct any astigmatism that may be present, because by relaxing the accommodation they increase the divergence. In myopia and myopic astigmatism the refractive error should be corrected fully, for the minus glasses stimulate the accommodative act, and in this way increase convergence and help overcome the divergence, especially in low degrees of divergence.

4. *Bar-Reading.*—In patients who are old enough, bar-reading is a useful adjunct in making the patient use the eyes together. It consists simply in holding a pencil or some other small object vertically before the eyes, and in front of a page of printed matter which the patient is reading. If the patient is not using the eyes together, but only the good one, when the line of vision in the good eye comes to the pencil the patient will stop reading or skip a word, or part of it, whereas, if the eyes are being used together, no such stop will take place, or missing any letter or part of a word. By persistent practice with this method the patient is often brought to use the eyes together, with effort at first but with facility after practice.

5. *Stereoscope.*—The stereoscope can not be used till the patient is 5 or 6 years of age. Its use gives the greatest stimulus to single binocular vision, that is, true form perception. By using special pictures, especially geometrical figures, as truncated pyramids, the idea of perception of form in three dimensions is given.

There are a number of stereoscopes of special make to be had, but the ordinary stereoscope as bought in the market, if the prisms are removed and plus 6 D. spherical glasses substituted, answers all the purposes for the stereoscopic exercises. Especially is this so if the pictures of Dr. Kroll are used. These can be bought at any good optician's, the whole outfit, stereoscope and pictures, costing but two or three dollars. The patient should be instructed how to use it at the office, then should purchase one to be used at home. There is one sliding picture among Kroll's pictures. For fusing purposes this is admirable. At first the two sides can be brought close together until the eyes are able to fuse them as one; then the distance between them increased until the eyes are brought parallel, or almost so, and still fusing the images. This should be done for

a few minutes at a time several times a day, the muscles not being exercised at any one time to the point of exhaustion.

OPERATIVE TREATMENT.

There is a wide difference of opinion among surgeons as to the best method of operating for strabismus, also as to the proper age to operate. Individually, I think no operation for strabismus, with few exceptions, which I shall presently state, should be performed on children under 4 years of age. I am aware of the fact that not a few operators have operated for a strabismus as early as 2 years of age. This should not be done, but on two conditions: 1, where the squint is congenital, constant and not improved by the exclusion pad and atropin; 2, where false fixation exists. In the first condition I believe the squint is due to fault in the muscle itself, that is, improper development or insertion; and in the second, to marked amblyopia, which is not likely to improve by non-operative measures, but to get worse by delay. After 4 years of age, the proper time to operate is when the non-operative methods cease to improve the condition of the strabismus, but not under six months' time should be considered a fair trial in any case of the non-operative treatment, unless some special reason prevails.

The different operative procedures for the correction of strabismus may, in a general way, be divided into four classes. The technique of individual operators may vary to some extent, but the essential part of the operation remains the same.

1. Simple tenotomy of one muscle in the deviating eye, and later if effect enough is not obtained to perform advancement of the opposing muscle in the same eye.

2. Simple tenotomy of one muscle in the deviating eye, and later, if not enough effect, tenotomy of the like muscle in the opposite eye; if still not enough effect advancement of the opposing muscles first in the deviating eye and then in the opposite.

3. Advancement of the weak muscles in each eye (the external recti in convergent squint and the internal recti in divergent squint), after Landolt's method.

4. Stretching the strong muscles in each eye (internal recti in convergent squint and the external recti in divergent squint) and then tenotomy, after Panas' method.

Various devices for increasing or diminishing the effect of the operation have been recommended, such as a thread extending from one eye to the other and tied across the nose (Gruening) in cases of divergent squint; or a thread extending from the eyeball to the outer canthus in convergent squint after the operation has been performed. But these are only refinements of technique, and may or may not be used according to the desire of the operator.

In the first method of operating, where but one eye is operated upon, the assumption is that squint is a unilateral affection, and, therefore, the operations are confined to but one eye. I believe but a few members only of the profession follow such a procedure now, it being generally conceded that strabismus is a bilateral affection and not a unilateral one. Operations on one eye alone, therefore, should be discouraged, because they are performed under a misconception of the true nature of squint.

The second method of operating is followed by many surgeons, perhaps the majority of operations for strabismus come under this class. The method of performing an ordinary tenotomy is so simple that it needs no description here. Suffice it to say that the effect of a tenotomy may be materially increased or diminished by the extent of the dissection of the capsule of Tenon at the time of the operation. The wider and deeper the separation of the capsule the greater the effect, and vice versa.

The third method of operating was recommended by Landolt many years ago. He advised advancement of the weak muscle in each eye without tenotomy of the opposing muscle.

Of all the different advancement operations, I like best what is known as the straight advancement. It is as follows:

Make a vertical incision about one-half inch in length in the conjunctiva, about one line from the margin of the cornea and just in front of the attachment of the muscle to be advanced; dissect up the conjunctiva from over the tendon of the muscle, then make a small hole in the capsule of Tenon and introduce a hook under the tendon of the muscle, and then a second hook, and expose the tendon of the muscle for about one-half inch by pulling the hooks in opposite directions. Remove one hook while one is left to hold the tendon away from the eyeball so as to introduce three needles with thread attached—in each instance from without inward through the tendon of the muscle about one millimeter or more, according to the effect desired, from the attachment of the tendon—one needle at the upper margin of the tendon, one at the lower, and one through the middle of the tendon. The conjunctiva may be picked up on the needles just before they are inserted into the tendon of the muscle so as to advance it along with the tendon. The tendon is now cut from its attachment. The center needle is inserted into the sclera about two millimeters from the corneal margin, directly forward from the old attachment of the tendon, coming out at the corneal limbus. Then the needles in the lower and upper margins of the tendon are respectively inserted into the sclera below and above and on a vertical line with the central suture. The center suture is tied first, the lower and upper ones at the same time (one by an assistant) so as not to cause torsion of the eye.

Both eyes should be bandaged for fifteen hours; after which time it has been my practice to remove the bandage permanently, putting on iced cloths for one-half hour four times a day to relieve the congestion. In convergent squint if there is an under-effect I instill atropin and have the patient wear glasses; if an over-effect, I leave off the glasses and do not use atropin. Landolt advises to keep the eyes bandaged for a week, the patient in bed and quiet. Dr. Wooton, at the Manhattan Eye and Ear Hospital, who does essentially the same operation as Landolt, follows his plan of keeping the eyes bandaged for a week. Dr. Wooton reports favorable results from fifteen operations, only two being failures. My experience with simple advancement, without tenotomy of the opposing muscle, is limited and unfavorable. In no case was the effect sufficient. In a recent discussion of this subject at the New York Academy of Medicine, Dr. Gruening said he had tried Landolt's method, and had put cases at Dr. Landolt's disposal when he visited this country, but that in none of the cases was the effect of the operation sufficient. The ultimate results by this operation are not satisfactory because of not enough effect.

The fourth method of operating is after Panas' suggestion. He operates on both eyes in every instance. In convergent squint on the internal recti, in divergent

squint on the external recti. The tenotomy is performed in the usual way with this important variation, that the muscle to be operated upon is stretched before cutting. For example, in convergent squint the hook is placed under the tendon of first one internal rectus and then the other, and the eye turned forcibly outward until the cornea is entirely hidden under the external canthus, then the tendon is separated as in ordinary tenotomy. In divergent squint each external rectus is stretched by turning the eye forcibly inward till the cornea is hidden under the internal canthus, then simple tenotomy is performed. Both eyes are bandaged for twelve to fifteen hours, when the bandage is removed and iced cloths applied. In convergent squint, if the effect is insufficient, atropin is instilled and glasses then worn; if over-effect, glasses are left off and no atropin used. In divergent squint, if under-effect, glasses are put on; if over-effect, glasses are left off and atropin instilled.

The immediate result, as a rule, after a Panas operation is an over-effect, varying from five to twenty-five or thirty degrees. This rapidly disappears, however, till within a few days to a few weeks, in exceptional cases months, the eyes become parallel, and in the great majority of cases remain so; many of the cases securing single binocular vision by one operation.

To any one performing Panas' operation for the first time the immediate result is somewhat alarming. I must confess I was reluctant to undertake the operation until I saw the good results obtained by Dr. Roosa in eyes operated upon by this method. Especially was I fearful of over-effect in small degrees of squint. My experience with the operation, however, has taught me, contradictory as it may seem, that in low degrees of squint we are not so apt to get over-effect as in the higher degrees. It was puzzling to me at first to get a satisfactory explanation of this effect—opposite to what was naturally to be expected. After observing a number of cases and investigating the physiology of muscle and nerve stretching the following explanation was suggested: In cases of very marked squint, especially where there is a false fixation, with limitation of motion, where there is contracture and actual shortening of the muscle, the force that it requires to stretch such a muscle until the cornea is hidden in the opposite canthus is considerable, and the nerve fibers and muscle cells may be stretched to such an extent as to cause temporary paralysis, which it may take days, or, in exceptional cases, weeks or months even to recover from. On the other hand, where there is but a small or moderate degree of squint, the stretching does not have the paralyzing effect to near the same extent as in cases with excessive squint.

W. P. Lombard, in speaking upon the irritability of nerves and muscles, has this to say: "The irritability of muscles is likewise increased by moderate stretching and destroyed if it be excessive. Surgically, the stretching of nerves is sometimes employed to destroy their excitability. Slight stretching heightens their excitability, and even quite vigorous stretching has only a temporary depressing effect unless it be carried to the point of doing positive injury to the axis-cylinder and of causing degeneration. As nerves have the power to regenerate, they may recover from even such an injury."*

Again, in relation to the conductivity of the nerves and muscles, Lombard says: "The power of conduction appears to return before irritability, and may be observed first at the end of the third week. Apparently sensation is recovered before the power of making voluntary movements; this difference may well be due, not to any essential difference between sensory and motor fibers, but to the fact that extra time is required for the motor fibers to make connection with the muscles."

It is unnecessary to say that some judgment must be used in determining the amount of force to be used in stretching a muscle. If the cornea can not be hidden in the canthus without causing actual damage to the muscle fibers then it should not be carried so far. Of course, experience here, as in every other operation, counts for much in the successful result. Panas tested the strength of the ocular muscles thoroughly on the dead subject before performing the operation on the living, and found that the muscles could withstand great strain before breaking. Another factor in producing an over-effect in cases where excessive squint exists is the marked amblyopia usually present in such cases. The desire for fusion of the images is not so great in such cases as where the vision is nearer equal in the two eyes, as it often is in lesser degrees of squint. This factor, however, figures in the results obtained after any method of operating for squint, and is not peculiar to Panas' method.

In the cases which have not been successful after Panas' operation, over-effect has not resulted much more frequently than under-effect. Neither has the fear of ultimate over-effect, as predicted by the opponents of the Panas operation, been fulfilled.

There is one other operation of which I have not spoken so far, because I have had no experience with it. This is the knuckling operation of Savage and Valk. In the operation the muscle to be advanced, the weak one, is bared of conjunctiva and capsule of Tenon for some distance back of its attachment. Then a small speculum (Valk's), somewhat like the ordinary lid speculum, is placed under the muscle. A threaded needle is then so introduced that when the thread is drawn taut a knuckle is formed in the tendon, thus shortening the muscle. A longer or shorter knuckle is taken in the tendon according to the effect desired. When the effect is not great enough, Dr. Valk, I believe, performs simple tenotomy of the opposing muscle. Valk claims 100 per cent. of cures by this method, that is, parallelism. I think this too large a percentage to claim for any operation, as no operation yet devised to correct squint has proved entirely satisfactory. Individually, I prefer Panas' method to any other, and believe it will win for itself a permanent place in ophthalmic surgery.

(To be continued.)

* Loc. cit., p. 78.

THE REQUIREMENTS OF MODERN SURGERY *

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Fifty years ago the surgical operations performed were principally amputations of limbs and operations for hernia and stone, but with the discovery of chloroform and ether and the resulting painlessness of operations, more surgery was practiced. During the next twenty-five years the resulting large mortality in all kinds of operations, even the most simple, prevented patients from submitting to them; yes, even the medical profession would only have recourse to them in extreme cases, and by this very procrastination the mortality

* Read at the Meeting of the Michigan State Medical Society, May 15, 1901.

was larger, to the odium of surgery, and the dread of it was manifoldly increased.

A quarter of a century ago, when Lister called attention to the frequent failures and causes of death after surgical operations and how to prevent them, surgery received a big impetus. When it was clearly demonstrated that wound infection was the trouble in most cases, and preventing wound infection by means of antisepsis, surgical operations could be performed with comparatively little danger. Then the surgeons became bolder and newer fields were opened for surgery; and as we advanced from antiseptic to aseptic surgery, that is to say, instead of killing or destroying the micro-organisms, we prevented them from getting into the wound, another great advance took place. This took another ten or fifteen years to thoroughly understand. So that we might say that modern aseptic surgery has only been practiced for the last ten years, and what a gigantic stride it has made during that time.

If you ask what is modern surgery, I would answer that it is the gospel of cleanliness; that covers the ground. But surgical cleanliness is entirely different from what the laity calls clean; it must be absolutely clean, and some great surgeon has placed in his operating-room a sign which reads: "Nothing is clean that can be made cleaner." Here we have it: Absolutely clean. There must be no dirt or foreign substance come in contact and infect the wound, and here is where the great difficulty lies, the almost impossibility of excluding all kinds of dirt. When we speak of dirt from a surgical standpoint we mean micro-organisms, infection, or the entrance of something into the wound which may cause suppuration, putrefaction, etc.

During the first years following Lister's investigation every effort was made to destroy the micro-organism by chemicals. Then an effort was made to sterilize the air with carbolic sprays, and great attention paid to prevent post-operative infection of the wound by covering the cut extensively with bandages and pads that were impregnated with chemicals. In the course of time, however, it was found that some of these chemicals were injurious and a better way would be to exclude germs instead of destroying them. Thus a gradual change took place, and from the antiseptic surgery we have come to practice aseptic surgery; that means the prevention of wound infection by absolute sterilization of everything coming in contact with the wound.

Here the problem comes and the difficulties, and here also failures are manifested on account of our utter impossibility of absolutely preventing infection in every case.

THE PATIENT.

1. The great point in connection with this is the individual to be operated on. In the course of time we have found that there are people who are immune against certain diseases; they have a power of resistance. Some person has it, say, against smallpox; others have it against measles. In the southern part of the country many have it against yellow fever. Some have this immunity against certain diseases some time during their life, and then another time they have not. Some seem to have it against one or a number of diseases, and others are so fortunate as to have it against a great many diseases. Yes, everybody has a power of resisting diseases in his own system, but the power is different in each individual. But in the present state of our knowledge, by looking at a person, by feeling his pulse or taking his temperature, we are not able to say in a given case how much power of resistance that individual has. We can to a limited extent judge by the history of the case and the general condition of the patient, and, in fact, we try in many cases by proper alimentation and treatment to increase the individual power of resistance to infection before we operate on them.

All these are intricate and complicated problems of surgery, and still how much greater is the difficulty in the real operation when we consider, as above stated, the absolute cleanliness. Every layman can see how very difficult it is to carry that out. First the patient himself is very difficult to clean, because the skin, the hair, the nails are swarming with micro-organisms of some kind, and in hundreds of experiments that have been made to clean the skin it has been impossible to do so absolutely, and in the present state of our knowledge comparative cleanliness has been the best we have been able to do. We have minimized the chances of infection of the individual himself. There is another point in connection with it; we have found that the danger of infection is in proportion to the amount of infection: in other words, a person is liable to resist the onslaught of a few micro-organisms in the wound; he can take care of them and destroy them, but when the number is large the powers of the body can not compete. It is like giving a person a teaspoonful of alcohol, which would not affect him very much, but if you give him a half pint, he would be drunk, and if you gave him a quart it would kill him. So that as far as the patient himself is concerned, we are able to get him or her reasonably clean.

THE HOSPITAL.

2. If the patient is clean you can not operate on him that way. The patient must be covered, kept warm, in fact. Some times a great deal of artificial heat is required during the operation to lessen the danger of shock, and, consequently, the patient must have clothing, blankets and covering of all kind. But all these are liable to be dirty. All these may look clean in a household, and the housewife may be the cleanest of women. Everything about the house and clothing, the linen and towels, may be neatness and cleanliness itself, and still all these are liable to be infected and to contain micro-organisms of all kind. That they do has been proven many a time; but this need not frighten anybody. This does not injure or endanger anybody in ordinary everyday life. But with the surgical eye we can see that wound infection can take place, and that it is dangerous to use such clothing, towels and sponges around a surgical case.

We insist on absolute sterilization of everything that the patient has on, of everything that is in the operating-room; this includes tables, chairs, all the basins and bowls and everything that may be used. Everything must be so clean and as clean as the patient is, and as clean clothing as he or she has on. All must be clean: the nurses, who are in attendance, the surgeon and his assistants, and everything that can by the remotest possibility come directly or indirectly in contact with the wound must be clean. The air is liable to carry contagion, although it has been proven that there is comparatively little danger of contamination from the air; but the air can be purified by gases, superheating steam, etc., if necessary, which will seldom be the case.

Considering all these points about the requirements

of modern surgery, anybody can readily see the utter impossibility of carrying out modern aseptic surgery in a private house. Simple little operations where the danger of infection is small, or rather if infection should take place, may delay healing and retard a rapid recovery of the case, but the patient's life is not jeopardized. Thus, simple operations can be performed, of course, in a private house. There will also be severe cases where the patient can not be moved, desperate cases where time is an object and must be subject to immediate operation, which will necessitate their being operated on in their own homes. Certainly, such emergency cases, operated upon at their own homes naturally have their chances for recovery lessened. The mortality in a hundred given cases would be greater than a hundred given kind operated under more favorable surroundings.

If a patient would die in 6, 12 or 24 hours, under all circumstances, he had better be given the benefit of operation at the house, even if the mortality in such cases would be 20 per cent., while in a hospital perhaps only 5 or 10 per cent. No one would think of letting a patient die without trying, simply because all the requirements of modern surgery are not at hand. In fact, even in a private house a great deal can be done in carrying out modern surgery. Clothing can be sterilized in an oven. In other cases micro-organisms can be destroyed by boiling, by soaking them in various chemicals, etc.

Every surgeon understands that what I want to call attention to simply is that the highest and most perfect type of surgery—that is, in the direction of the preliminary preparation of the patient, if that is necessary—the technic, the rapidity of the operation, the lessened danger from shock and the most careful judicious after-treatment of surgical cases can be better carried out in a well-equipped hospital than they can in a private house.

Naturally you will say that there are hospitals and hospitals. This is true, but a hospital need not be large and expensive as long as it is well equipped with the necessary apparatus for sterilizing, well equipped with trained nurses who are enthusiastic in the gospel of cleanliness, and as long as the surgeon is thoroughly competent. I have seen small hospitals in small towns where all the facilities were at hand and the best work was being done.

But here, like everywhere else, the great question of individuality has first place. It depends on the individual who is at the head of it, who manages and who directs it. A good disciplinarian and progressive up-to-date person is required. Otherwise a hospital that should be good may be no better, in fact, not as good as the home of an individual. In a hospital there must be facilities of strictly separating all infectious and contagious diseases from surgical cases.

THE SURGEON.

The third great requirement of modern surgery is the surgeon himself. Although I mention this last, it is not the least; in fact, it is really the principal requirement. The question of individuality always comes to the front, and the power of adaptation to environments of an individual is far greater than the power of environments to shape the course of a person. A patient in perfect health, with the greatest power of resistance, the most beautiful hospital, or the most perfectly arranged operating-rooms, the well-trained nurses and the alert assistants can not compensate for a poor operator.

Before the days of anesthetics there were few great surgeons, because great dexterity and perfect knowledge of anatomy was required. The surgeon in those days was a mechanical genius who had great dexterity, who had to operate very quick; every move had to count; every movement tended to do the operation rapidly; the pain and suffering of the individual was indescribable; it had to be shortened as much as it lay in human power. The slow and slovenly bungling operator did not exist; he soon dropped by the wayside and gave up surgery.

When anesthesia was used and the patient was free from pain, slower and more careful operating was allowable, and, in the course of time, this tendency to slowness and deliberateness has crept into the ranks of surgery more and more. Every slow and slovenly physician who never did any mechanical work in his life, whose hands are like an elephant's foot, whose joints are as stiff as a 30-year-old cow's, considers himself a surgeon, competent to practice surgery. So it has kept on, and to-day with modern clean surgery and the wonderful result and the consequent lessening in mortality, it is still worse.

When it is known how large a number recover after operations, every tyro thinks he can do the same thing. He perhaps sees a surgeon operate from a distance, sees how quick and easy it is done; and thus forthwith he rushes in "where angels fear to tread." He does not see the years of practice and experience that were required; he does not notice a thousand and one details of an operation; he does not see all the preliminary preparations.

In the first place he is a poor diagnostician; he will operate on cases that he should not operate upon; he will operate on them when they should not be. In cases that need operation, he hesitates, he trembles, and the "golden moment has escaped." Many men just out of college rush out to operate, and the more difficult the operation the more anxious they are to do it. They have seen operations from their seats and know a little anatomy; forthwith they are surgeons. Some old practitioners who have practiced a quarter of a century or more, hearing about the wonderful results and the great fees received by surgeons in the medical centers, forthwith buy a new edition of surgery, read up and proceed to operate. Fortunately, some of these, after they have killed a dozen people, see the error of their ways, give up and return to practice. If anyone should hint to these people that they are not competent to practice surgery on account of lack of training, they feel very indignant and they say: "Why, you had to learn. You killed a lot of patients learning this."

What can we say? Those of us who have worked along new lines in the last fifteen or twenty years, who have, so to say, helped to make especially abdominal surgery. We in our ignorance made many a mistake, operating upon many a patient we would not have operated upon to-day; we have had many a patient who died who would not have died to-day, simply because we had to learn and had to do this. The thoughts of this often keep us awake at night.

Because we were obliged to do this in order to open the path for the future, in order to save life, and lessen suffering for coming generations, that does not say that every Tom, Dick and Harry has got to learn this over again, has got to make those same mistakes we have made. We made the mistakes, and we have tried constantly to teach the rising generation of surgeons how

to avoid the mistakes. I do not know of a surgeon in this country who has not constantly tried to show the young man, or the old one, for that matter, who was trying to learn modern surgery, how to do it.

But this takes time, and no one can become a modern surgeon by going to a post-graduate school and seeing a surgeon operate at a distance of 50 or 100 feet. In order to become a modern surgeon he must work directly with the modern surgeon; he must assist him; he must be with him day after day, month after month—yes, year after year, certainly not less than a year. Then he will probably appreciate the difficulties of diagnosis, the difficulty of selecting the right kind of operation, the difficulties of picking out the propitious time and moment for each individual patient. Then he will pick up some of the fine points in the technic, the minutiæ or reason why doing one little thing, or by not doing it, brings success or failure in an operation. Providing also the aspiring surgeon has had the necessary preliminary training.

I once read a paper of what a surgeon should know and it gave all the essentials: That he should be a scholar with a good education, that is to say, he should know Latin, Greek, history and mathematics, and be a good anatomist; know all about signs and symptoms of diseases; know something about chemistry, bacteriology, etc. It was a long story, but the essayist forgot to mention one thing, and that was the principal thing of all. He forgot to say that a surgeon needed a fine Italian hand.

The man who has never done any mechanical work, or who was not raised on a farm, or who was not allowed to make a little sleigh or a baseball bat when he was a boy, or who never worked around in the garden, or played ball or the piano, or who never made pills in a drug store; the man who had never developed a mechanical hand from his earliest childhood, will never be a good surgeon. The man who simply studied all his lifetime and whose father was kind enough to buy him everything from a wagon to a book, who was never taught to draw and to cultivate an artistic eye or develop the sense of symmetry and proportion, that man will never be a surgeon—it is not in the nature of things.

If I read, for instance, in a cheap medical journal, an editorial something like this: "We've quit sending. We do our own surgery, having to provide for our own wife, our own children, ourselves. If we don't know how to do an operation we'll go to the post-graduate schools and learn how, and charge accordingly. If we haven't the skill that comes from experience, we'll get it just as the professor got it, by doing the operation at every opportunity till we become adepts. And who can blame us if we determine to do our own work ourselves? Are we not equally M. D.'s, with equal privileges? This reference of cases to specialists is in many cases unnecessary, anyhow. Very often it is simply because the doctor is too busy to attend to the matter himself. But the real remedy is for him to charge enough to make it worth his while to buy books and apparatus, take special instruction and do the work. Do you have many cases of eye, ear, nose and throat affections? Open your purse-strings. Come to the city and take a post-course; buy the apparatus. It will cost you up to $500, but if you can not make $1,000 a year out of the results you are not much of a business man, and not apt to succeed as a doctor."

It makes me often despair to hear or read such views, but I am consoled with the thought that there are but few members of the profession who would sanction and indorse such ideas.

At the request of many surgeons and physicians from different parts of the state, I emphasize the question of a good surgeon especially, although I object to do it, saying that I can not see the reason why I should always be the objector. But they all insist that I am the very one to do it, as I have passed through all the phases of general practice and surgery, and no one would accuse me of being jealous and envious of the rising rank of surgeons. How much better is an editorial I find in the *International Jour. of Surgery,* which reads as follows:

"We sometimes hear, nowadays, of men who speak of the present rage for rapid operating. Of course, anesthesia has diminished the need for the lightning kind of work and was, in former times, the mark of the good surgeon. The very perfection of our procedures, the care employed in hemostasis, in accurate approximations of divided surfaces, in the application of aseptic dressings that shall also be impermeable to germs coming from surrounding atmosphere, demand an amount of time that would have seemed altogether exaggerated to our ancestors. If there is now a rage for rapid operating, and we can not say that it is very widespread, we must believe that it is a rather favorable indication of progress. Each minute of unnecessary delay increases the possibility of infection, keeps the patient longer under anesthesia, and last, but not least, tends to cultivate in the operator the habit of leisurely, if not idle, operating, that must result unfavorably to his statistics. The most rapid operators we have seen indulge in no unnecessary bustle and hurry. The great secret of their work is that they make no useless movements, that their assistant staffs are thoroughly trained, that every step of an operation is so clear in their minds that each one follows the last with the precision of clockwork. In other words, every operation is studied out and prepared, and every complication that may arise during its performance has been forseen. This sort of work is true, rapid surgery, and if it has become a rage we are only too glad to realize the fact, and to advise all surgeons to cultivate it."

The medical profession is aware how careless the layman is in choosing a physician. They will pick out anybody who has a sign out, who belongs to their church or lodge, who talks most or blows a good deal about himself, without looking up his pedigree, where he graduated, or if he ever graduated, and never inquire about his capacity. If a layman should be careful in selecting his physician, how much more careful should he be in selecting a surgeon. How absurd to let anybody operate who says he can, unless it is known he has had some practice and some experience. The family physician naturally must do some amount of surgery, every doctor has to; but when it comes to special cases, he certainly should not undertake it. Even if he tells the patient that he can do it just as well; that is all nonsense. We all know that he can not, unless he has taken training in a certain direction.

There is not a doctor here that would allow everybody to operate on him for a cataract, or operate on him for appendicitis. There is not a physician here who would let anybody operate on his wife for a papilloma on the vocal cords, nor would any physician present allow anybody to operate on his mother for vaginal hysterectomy, or on his sister for an ovarian tumor. The only fair and honest way is to ask yourself the question, What would you do? Put yourself in his place.

There is another very important point in connection with this, and that is the time to study. A man who is a general practitioner and has to make many calls can not be a good student and keep up with the progress in all branches. Therefore, when a man gradually emerges from general practice to surgery he must devote himself exclusively to the latter. If he attempts to do general practice he will not have time to study; hence, will be a fossil in a short time. In my own experience, where I limit myself exclusively to abdominal surgery, I hardly have time enough to read what is written on this branch of surgery alone and also keep up, to a limited extent, with the general progress of medicine.

Always bear in mind that my remarks refer to special surgery, not simple everyday occurrences, such as fractures and injuries of all kind, and the simpler operations; these the general practitioner must attend to. What I am pleading for are so-called cases of special surgery, which generally are not emergency cases, and where there is plenty of time to select the best surgeon for that particular case. I refer to delicate operations on the eye, the most difficult operations in the throat, and the complicated operations in the abdominal cavity.

Finally, you will ask me: "Who could or should be a surgeon?" In answer I will say that he must be a well-educated physician, must have been a general practitioner and a good therapeutician. He must take up surgery early and gradually develop a surgical hand; he must be an assistant of a first-class surgeon for at least a year, where he will see hundreds of operations of various kinds. Such a man may be a good surgeon. He ought to be in some large town, say a county seat, and, as his surgical practice grows, he ought to give up absolutely general practice and devote himself to surgery exclusively, and then his colleagues in the county would support him. Hence the requirements of modern surgery are:

1. A patient brought to the highest state of resistance to microbic infection and made as clean as possible.
2. An operating-room, preferably in a hospital, where everything has been made thoroughly sterile. This includes anesthetizer, assistants and nurses.
3. A surgeon who has a mechanical hand and has received a long, thorough training.

A REPORT OF FOUR CASES OF FAT NECROSIS IN CONNECTION WITH GALLSTONES.

W. A. EVANS, M.D.

CHICAGO.

The fact that I was able to find fat necrosis in three cases, and to learn of a fourth case in the course of two weeks, all of such cases either coming to autopsy or observed during surgical procedure, would indicate the probability that fat necrosis is not infrequently associated with gallstones, and that there is a necessity for more effort to differentiate gallstones with necrosis from gallstones without it.

So far as our information at the present time would indicate, the only immediate value of such a differentiation would be in the line of prognosis. It is reasonable to conclude that more accurate and extensive observation would eventually lead to betterment of treatment, either in the matter of improved surgical technique, new surgical procedure or improved treatment along medicinal lines.

Many authors have written of gallstones as prominent etiologic factors in fat necrosis, and in lesser measure in pancreatic auto-digestion. The most striking contribution to the literature of the subject is that of Halsted and Opie in the Johns Hopkins Bulletin, for 1901.

The condition is usually unrecognized prior to operation or autopsy. In the case occurring in the service of Dr. Herrick, at Cook County Hospital, the clinical diagnosis was cirrhosis of the liver, and the comparatively localized fat necrosis was found at postmortem examination. In the case of Drs. Roehr and O'Byrne the preoperative diagnosis was gallstones, with suppurative cholecytitis. The diagnosis of complicating fat necrosis was made by the examination of a specimen removed at the operation. It was confirmed by postmortem examination. In the case of Drs. Wells, Lewis and Davis, the diagnosis was gallstones, and the complicating fat necrosis was not suspected until it was revealed by the operative procedure.

In the case of the Drs. Beck the diagnosis was gallstones, but there was quite a general conviction that there was some morbid entity in the abdomen other than stones. Some of the consultants suggested that there was an appendicitis, and others had noted this vague something without being able to assign a reasonable explanation for it.

At the operation, after the gall-bladder had been drained, the foci in the omentum were observed, while a search was being made for the appendix. The appendix was found to be normal. Some of these foci were removed, and sections of them are shown here. This case proceeded to a somewhat uneventful recovery.

It is probable in this case that the presence of fat necrosis as a complication would have been overlooked, both in the diagnosis of the case before operation, and in the diagnosis as made at the time of the operation, had it not been for the fact that it seemed advisable to explore the peritoneal cavity in the direction of the appendix.

The bearing of this point is this: Is it not possible that a moderate amount of fat necrosis is very frequently overlooked, both in the diagnosis made before the operation and in that made at the time of the operation?

HISTORY OF THE CASES.

CASE of Drs. Davis, Lewis and Wells: A woman, 45 years old, had had several attacks of gallstone colic during the last eight years; only one of these was associated with jaundice. The last attack of gallstone colic did not seem to differ from the preceding attacks. After the acute pain had subsided in this case, there remained a great distress. A feeling that it was difficult for the patient to describe; a painful disagreeable sensation in the upper segment of the abdomen, but impossible of accurate localization. After three or four days symptoms of localized peritonitis developed. Five or six days after development of these symptoms the patient was operated. Two hundred and fifty calculi, approximately, were removed from the gall-bladder. The gall ducts were explored, but no stones were found therein. There were found adhesions, comparatively recent, in the upper abdominal segment. The omentum was studded with yellowish-white nodules. These were soft and mealy in consistency. Two were removed for microscopic examination.

The patient seemed to do very well for twenty-four hours subsequent to the operation. Then there came vomiting and fever, and six hours later, or thirty hours after the first operation, a secondary one was done, during the course of which the patient died. Prior to the first operative procedure the pulse ranged from 80 to 100, the temperature was essentially normal, and the only point that attracted the doctor's attention as out of the ordinary was the general feeling of unrest and the demand for relief from a somewhat illy differentiated something.

Case of Drs. Roehr and O'Byrne: E., age between 30 and 40, large, heavy, florid man, six feet, weighing 240 pounds. For three years he has had often recurring attacks of biliary colic, accompanied by occasional jaundice. The general health between attacks is good. He has been ailing with symptoms of gallstones for the last four to six weeks.

Examination, August 10, gall-bladder was dilated, abdomen tense, stools white. Urine contained bile. Jaundice very marked. Temperature 98; pulse 90. Respiration somewhat irregular, irregularity ascribed to severity of spasms of pain.

On the 11th, condition somewhat improved.

August 12. Stools bile-stained. Vomited less. Vomited matter is bile-stained. Temperature 98; pulse 85. Respiration irregular. Abdomen tense and sensitive. Gall-bladder tense.

August 13 and 14. Condition remained much the same. Abdomen somewhat more tense, temperature going to 100. On the 15th, sent to hospital for operation. Some rise of temperature. Evening of the 15th, passed gallstones with stools. On the 16th, operation was done, and the omentum was found somewhat attached around gall-bladder, and also a generally distributed peritonitis around same. Considerable chocolate-colored fluid in the peritoneal cavity.

Postmortem examination made two hours after death, on the morning of August 18. The wound was found nicely agglutinated. There was two inches of subcutaneous fat. There was no necrosis or hemorrhage in this fat. Just external to the peritoneum was a layer of preperitoneal fat, in which there were a large number of foci of necrosis. The omentum was found glued to the anterior abdominal wall, especially in the region of the incision. It is rolled on itself, and reaches to the level of the umbilicus. It is firmly attached to the intestines. It is greatly thickened, and contains an enormous amount of fat necrosis. Some of the nodules are as large as a quarter of a dollar. There is very little fluid in the abdominal cavity. The intestines are distended with gas, especially the cecum. The appendix is a little external to McBurney's point. There is necrosis in the mesenteric fat. The liver does not come to the free border of the ribs, except at the episternal notch. There is some nutmeg, some fat infiltration. Gall-bladder, surrounded by lesions, comes below the border of the ribs; contains some bile, but is not distended. There are a few gallstones in the gall-bladder, but there are none in any of the ducts. There are a few ounces of bloody fluid in the right hypochondrium—walled off. There is some acute nephritis. There is much necrosis in the perirenal fat. There are fibrous adhesions over the surface of the spleen, which otherwise is normal. The pancreas shows fat necrosis, and hemorrhagic pancreatitis.

The lungs and heart are normal. Microscopically, the liver shows fatty infiltration and bile staining. The kidney cloudy swelling, with hemorrhagic exudation. The pancreas shows extensive extravasation of blood, with fragmentation of cells and loss of staining power.

Cook County Hospital Case: Martin J. P., 59 years old; occupation, laborer. Has been sick ten days. Was admitted to the Cook County Hospital on August 14. Service of Dr. Herrick.

History given on the 15th was: Patient has been sick more or less for last five years. Present trouble: About one week ago he noticed his eyes becoming yellow. Abdomen began to swell, and increased for some days. During this time he had diarrhea; urine contained bile. Has not vomited, but has felt like he wanted to. Is continually regurgitating gas into his mouth. Tenderness over liver. Grows weaker every day. Legs have not swollen up. Has had severe fainting spells. During the last five years the patient has had three attacks like the present. Found no blood in his feces. Has had no great pain, chills or fever. He says he has lost 40 pounds in the last five weeks.

Previous History.—Thinks his father died with same disease he has. Has drank whisky excessively for the last three years; drinking as much as 30 glasses a day.

Physical Examination.—Conjunctiva yellowish, slight superficial hemorrhage. Widening of the walls in the lower portion of the chest. Marked prominence of the abdominal walls. Muscles are tense and dulness in the flanks changes by change of position. The liver is palpable, quite firm and quite irregular, extends four or five fingers below the costal arch. Tenderness on pressure.

Spleen not palpable. Area of splenic dulness increased. Patient died at the end of one day at the hospital.

Notes from Postmortem Examination made five days later.—Lividity moderate, jaundice pronounced, abdomen contains a large quantity of bloody serous fluid, omentum full of fat, found rolled above transverse colon, attached in this situation. Petechial hemorrhages in the parietal peritoneum and occasionally in small intestine. Large intestine displaced downward.

Pleura and pericardium are negative.

Spleen 400 gms. 15x4, surface smooth. Parenchymatous nephritis, bile-stained. Liver 2900 gms., very large left lobe, as large as 28x20x10. Capsule thickened. Subcapsular cysts in dome of left lobe; surface irregularly granular, cut surface same. Gall-bladder 16—7 extends two inches below ribs, large quantity of gallstones and débris escapes. Common duct patulous. Pancreas darker than normal. Small shot-like, yellow, soft masses in substance and vicinity. Stomach shows subacute gastritis.

Microscopic examination of the nodules shows them to be fat necrosis surrounded by a zone of hemorrhagic inflammatory reaction.

Histology.—Microscopic sections were made by me of the cases of Dr. Beck, that of Drs. Roehr and O'Byrne and of the Cook County Hospital. The histologic findings in the nodes in each case were the same.

There was a central zone of necrosis; around this was an area of inflammation, productive and exudative as well as markedly hemorrhagic in character. The changes in the central zone were as follows: The action appears a selective one; that is to say, the connective tissue had been partially spared. The primary changes were in the fat. The fat had been so changed that it was no longer soluble in the agents employed in the hardening, clearing, embedding and mounting of specimens. In ordinary specimens made from an area containing fat, microscopic examination will show no fat, other than the quite characteristic area from which the fat has been dissolved. In this specimen the fat was not dissolved, but appeared as a mealy débris which took the hematoxylin stain with a rather diffuse blue. The appearance is similar to that which is given when an area of early calcareous deposit is stained by hematoxylin. The area around this showed a large proportion of blood free in the tissue, considerable numbers of wandered and locally proliferated cells. In none of the specimens was the process old enough to give us an idea as to what would have been the ultimate fate of these areas.

CASE OF DRS. BECK.

Mrs. M. E. had been confined early in May, 1901, giving birth to a healthy child. During the five weeks that followed she was entirely well. On June 20 she developed some pain in the abdomen, but unattended by jaundice or by fever. Between this date and August 3 she had several attacks, in which there was pain in the abdomen. In one or two of these there was a little temperature, and in one or two there was some jaundice. On June 21 she passed a calculus, having the appearance of the half of a split pea. On July 28 she passed another, of somewhat the same size and shape. The attacks in June were less severe than one which came on July 25. In this one there was greater pain, tenderness, greater restlessness, more fever, and more jaundice. A peculiarity of this attack was that on one day there was pain, a sense of resistance, and some edema in the right iliac fossa. On the next day the pain was greatest in the right hypochondriac region, and on the next day the greatest pain and tenderness was located on the left side of the abdomen, not very far from the region of the spleen, and when pressure was made on the right side, the tenderness was referred to this area on the left side. In this attack there were many of the

symptoms that are spoken of as those of shock; projectile vomiting, greater jaundice, greater pain and tenderness, and more fever. For a more detailed report of this case, I refer you to the article of Dr. Beck.

On August 3 the patient was operated on. The operation being such as to drain the gall-bladder and explore the region of the appendix. All over the peritoneum were seen white paper-like dots and lumps. There were some adhesions around the very markedly changed omentum and a hemorrhagic condition of the pancreas.

The gall-bladder was incised and the stones were removed, and some of the white nodules were removed for microscopic examination. No gallstones were found in the common duct. The patient progressed nicely; there was bile in the stools and very little bile drained from the wound. Several days after the operation the bile ducts seemed to have been obstructed and there was colicky pain in the region of the gall-bladder, followed by a large discharge of bile from the fistulous opening.

On one or two occasions while the gall-bladder was being washed, the amount of fluid was a little in excess, and pains of this character appeared and lasted for a few moments. The patient is now entirely well and free from symptoms.

It is to be noted that in each of these cases gallstones were present, and prominent. In none was there a stone in the common duct, or in the pancreatic duct. In Drs. Beck's case a small stone had evidently been fractured, and one fragment was not found at the operation, and some colic arising a few days after operation was supposed to be due to this stone having located in some of the ducts. This complication was transitory.

In the Roehr-O'Byrne case, the stone was passed by the bowel before operative procedure, but the necrosis was already under way.

In Halsted and Opie's case the stone obstructing was found with great difficulty. In each of the postmortems that I made, the stomach, duodenum, pancreas, liver and ducts were all removed together, and the ducts were opened up while yet attached at both ends, so that I am certain that no obstruction existed at the time of death. All of them, with the exception of the Cook County case had given a history of gallstone colic as a beginning of their attacks.

Let us consider the anatomy of the bile and pancreatic ducts.

ANATOMY OF THE PANCREATIC AND BILIARY DUCTS.

The hepatic duct and the common duct are approximately three times as large as is the cystic duct; besides, it does not have the transverse folds that are to be found in the cystic duct. Therefore, a stone escaping from the cystic usually passes the common duct.

About three-quarters of an inch from the intestinal wall the common bile duct comes in contact with the pancreatic duct. These run side by side through the outer fibrous coat of the duodenum, through the muscular tunic, passing through these coats quite obliquely and running from three-quarters to one and one-half inches through the submucosa. Commonly in the submucosa the two ducts join, making the enlargement called the "diverticulum of Vater." This pierces the muscularis mucosa again obliquely, pierces the mucosa obliquely, in which layer it is somewhat constricted, and empties on the mucous surface from the summit of a small elevation. This is the rule of arrangement, but there is great variation in it. Occasionally it happens that the two ducts open in the intestines by separate openings. There is a fair amount of variation in the distances from the intestinal opening to the point of fusion of the two ducts. It is to be noted that for over two inches the two ducts are either fused, or else in such close contact as that a stone greatly distending the one would obstruct the other to a greater or less extent.

If we allow the possibility that pancreatitis and fat necrosis can follow an obstruction in the duct common to the pancreas and the liver, or even to the common bile duct, after it has reached the muscular wall of the intestine, and remember the frequency of stones in the gall-bladder, we wonder why it is that fat necrosis is not immeasurably more frequent than it is.

For an explanation of this infrequency we have two anatomical facts. The common bile duct is three times as large as is the cystic duct, and the stones having escaped from the cystic duct are expected to pass down the common duct without further obstruction.

The second anatomical consideration is the very great frequency of accessory pancreatic ducts. In a study of 105 anatomical specimens made by Schirmer, some attempt at a second duct was found in all of the cases but two. A separate duct arising from the main pancreatic duct, the duct of Wirsung, and running into the duodenum about one and one-half inches above the orifice of the main duct, was found 56 times. Or, in other words, in this study of 105 cases, a duct capable of draining the pancreas, and at the same time not subject to stoppage by a gallstone, was found in 53 per cent. of the cases.

We conclude that a gallstone may lodge in the bile duct below the point at which the pancreatic duct empties, and in consequence the pancreatic fluid may be dammed back into the pancreas and in addition bile may regurgitate into the pancreatic ducts. The regurgitation of the bile can depend on the variation in the pressure in the pancreas, in the liver and the gall-bladder, and in this regurgitation assistance may be lent by an accessory pancreatic duct. If the liver continues to secrete and bile can not be emptied into the intestine, and if, at the same time, an accessory pancreatic duct was draining the pancreatic secretion into the intestines, it would only be a little while until the flow of bile would be from the bile ducts through the pancreatic ducts into the substance of the pancreas.

On June 9, I made a postmortem on M. D., in the Cook County morgue. This man had died from syphilis of the liver, lung and some other organs. His prominent symptom was persistent vomiting. The stomach and esophagus were bile-stained and the pancreas was bile-stained right to the tail, and there was a tenacious, gelatinous material in the ducts throughout the pancreatic gland. The process was recent, and no necrosis was found either in the pancreas or in the adjacent fat. The only explanation of the bile-staining in the pancreas was the change in the normal distribution of pressure by reason of the change in the direction of muscular peristalsis. Whether necrosis would have ensued in this case I am not in position to say.

Authorities are fairly well agreed that something more is needed for this process than the simple presence of pancreatic fluid. This something is spoken of as lowered vitality, and is ascribed to arteriosclerosis, spasmodic ischemia, etc. Chiari especially holds to this view. The experiments of Flexner, Opie, Fitz, Katz and Winkler are, if carefully studied, confirmatory of this view. In most of their work they tied the pan-

creatic duct with such care as to avoid injury to the pancreas as much as possible, yet the length of time that the experiment lasted—twenty to thirty days—would mean necessarily lowered vitality in the pancreas.

Chiari believes in the existence of two processes: fat necrosis due to a fat-splitting ferment, steapsin, and pancreas and other proteid digestion caused by trypsin. He believes that these processes can exist alone, or either can exist without the other. Flexner's views are, in the main, confirmatory. He adds a third, though superimposed, bacterial infection. Blume suggests that in auto-digestion of the process the sequence is, 1, necrosis of fat islands in the pancreas; 2, leakage of pancreatic secretion into these islands; 3, digestion of the proteids of these areas, and diffusion to new areas.

The distribution of the lesions is somewhat suggestive. Generally speaking, the digestion is limited to the upper abdominal segment. Frequently it extends well over the abdominal cavity. Occasionally it has been found as far away as the bone marrow.

Benda suggests that fat necrosis is frequently present, but is overlooked. He suggests an infiltration method to distinguish such necrotic zones. I did not get results in these cases with that method.

The localization in my cases was as follows: In the case from Cook County Hospital the necrosis was limited to the immediate vicinity of the pancreas.

In the Wells and Beck cases it was probably quite well distributed. In the Roehr-O'Byrne case the necrosis extended beyond the limits of the peritoneum. It was found in the preperitoneal fat of the anterior abdominal wall, though not in the subcutaneous fat directly over it. It was found in great abundance in the perirenal fat. It is probable that the pancreatic fluid finds its way into the peritoneal cavity, and is spread along the surface of the peritoneum. It passes through the stomata of the lymphatics and traverses the membrane, and appears in the neighboring fat. Opie records a case in which the pancreatic duct was tied off for twenty-eight days before the animal was killed. On postmortem, amongst other necroses was found some in the epicardial fat. Flexner reports a case in which the epicardial fat was involved. It is possible that the ferment traversed the diaphragm, went into the mediastinal nodes, and thence regurgitated into the epicardium. It is more probable that the route was directly through the diaphragm into the pericardium. The ferment seems to be easily decomposed, else considerable concentration is required, for there are very few instances in which there is evidence of blood extension, or even of distant transmission by lymph route.

The diagnosis of this condition presents great difficulties. It has been diagnosed before operation once in Chicago that I know of, and perhaps a dozen times throughout the United States. Let us study the symptoms in these cases.

Temperature.—A study of the range of temperature in these four cases would indicate that the temperature would probably give us but little information on the subject. In two of them there was a fever; in two there was none.

It is to be remembered, however, that the diagnosis has to be made from gallstones, and in each of the cases there was enough temperature to indicate that there was something the matter other than gallstones. In the history of the case of Dr. Beck the temperature is given as high.

In the case of Drs. Roehr and O'Byrne the temperature did not exceed 100 until the time of operation. After the operation it went to 102.5 and 103.5 on one or two occasions, but running generally in the neighborhood of 101, and rising in the last hours of life to 107, and probable higher.

If the temperature comes on during the course of gallstones, we must think of suppuration or other like illnesses, as well as fat necrosis. Usually in these cases the pulse was more rapid than the temperature would indicate; for instance, a temperature of 98.5 or 99, and a pulse of 95, and this at a time when no stones were passing, and the pain was not considerable enough to send the pulse up at all.

When I saw the case of Drs. Roehr and O'Byrne, the pulse was a prominent feature, being not only rapid, but running, and accompanied by profound shock. For example, with a temperature of 102, the pulse was 128.

Pain.—In each of the cases the pain, both as to origin and as to quality, would suggest something besides gallstones. It is difficult to describe it in any of the terms ordinarily used in the description of pain, and so the terms, distress, painful sensation, and something wrong, come to be used. There is generally tenderness that is sometimes acute, but is more frequently covered up. As is seen in the case of Dr. Beck, the tenderness may shift, in this case having been on one day in the right iliac region, and the next day in the left.

Fluid.—It is probable that the amount of extravasated blood would never be large enough to furnish any diagnostic clue. In the Cook County Hospital case the abdomen was filled, but the presence of the obstructive biliary cirrhosis would furnish an explanation for that. In the case of Drs. Roehr and O'Byrne, at the operation, fluid was found in the abdomen, but this had disappeared at the time of the postmortem examination, three hours later, with the exception of a small flocculated mass.

Nervous Unrest.—Halsted and Opie have called attention to the difference in the behavior of a patient with fat necrosis complicating gallstones, from that of simple gallstones. The patients are restless, moving about, having a sense of something impending, and ask to be relieved of a something which they do not themselves understand and can not clearly locate; when the patient is simultaneously suffering from gallstone colic, the sharp cutting pains, and the profound shock of the latter condition would completely mask the milder sensations of the first condition.

Lividity.—In only two of these cases did I see the patient. The Cook County Hospital case was seen five days after death, and at that time it was golden-yellow from jaundice and this masked the lividity considerably.

In the case of Drs. Roehr and O'Byrne, the lividity showed some twelve hours before death, as well as at the postmortem. He was breathing quietly in a well ventilated room, with a heart force amply sufficient, and yet the face was markedly livid. I have no observation on the point of Opie and Halsted as a special turgescence in the epigastrium. The epigastrium in this case was covered by a surgical dressing, which may have prevented duskiness from appearing.

In making a diagnosis of fat necrosis there are two conditions that must be borne prominently in mind. Uncomplicated gallstones or gallstones with suppuration of the cyst and acute intestinal obstruction. In differentiating fat necrosis from gallstones, we find the following points: In fat necrosis the pain is generally located in other regions besides that of the gall-bladder. There may be tenderness and pain in the gall-bladder and over

the liver, but in addition thereto there is tenderness in districts somewhat removed. Occasionally this pain and tenderness in fat necrosis is limited and remains in the same vicinity, but more frequently it either shifts about or is never capable of being definitely located. Quite frequently the sensation is not one of pain, but a general uneasiness and a sense of discomfort most prominent in the epigastric region though spreading to other areas. In fat necrosis there is more liable to be temperature than in uncomplicated gallstones, but the temperature is no more prominent than it is in gallstones with pus infection of the gall-bladder. The pulse is usually more rapid in fat necrosis than it is in gallstones, except it be the pulse of shock, which, in a case of gallstones, is not continued for any length of time. In fat necrosis there is a duskiness that we do not get in gallstones. This duskiness, in some cases, approaches a lividity. Halsted and Opie have called attention to a passive congestion or deficient oxidation in the epigastrium in cases of fat necrosis, and this symptom calls for further investigation, and finally there is in the bearing of the patient, his mental state, the general unrest, an indication that there is something more the matter than gallstones.

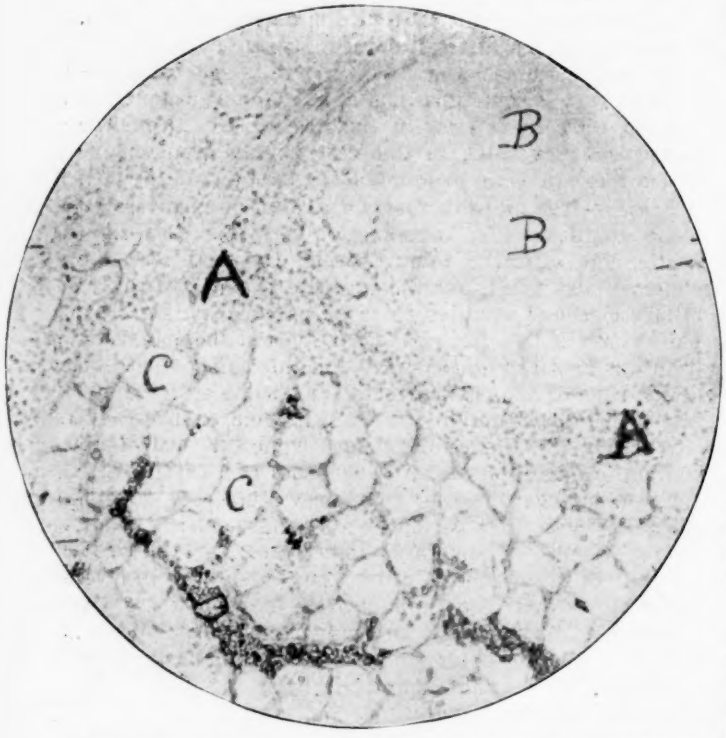

Fig. 1.—Drs. Beck's case. An area of fat necrosis surrounded by an hemorrhagic inflammatory zone.

A. Inflammation. B. Fat necrosis. C. Normal fat. D. Blood.

We are to bear in mind that very frequently our diagnosis is to be made between fat necrosis and the soreness that remains after an attack of gallstone colic and not between fat necrosis and the acute colicky condition. The persistence of this uneasiness, this pain, this tenderness should be suggestive.

The second condition with which fat necrosis is very frequently confounded, is acute intestinal obstruction. In this diagnosis assistance is lent by the history in the article in *Progressive Medicine,* written by Einhorn; these statements occur: "In most cases (of fat necrosis) described in the literature there was a history of repeated attacks; of a habit of indigestion. The attack which culminates in the disease in question is often one of several not differing in its inception from others already recovered from, except in its severity and persistence. In intestinal obstruction the vomiting is usually more prominent, more persistent and not infrequently is fecal. Occasionally peristalsis can be made out through the abdominal wall. In fat necrosis the vomiting is usually not very prominent, not very persistent and is never fecal. The intestines are quiet rather than otherwise. In each there is liable to be constipation, but the constipation will probably be more marked in intestinal obstruction than in fat necrosis. In each there will be pain, but of an entirely different character. The tenderness of fat necrosis is much more extensive, widespread, less localized than is that of intestinal obstruction. In each there is shock, but shock in fat necrosis does not approximate the shock of intestinal obstruction except the pancreatitis be distinctly of the hemorrhagic variety in which set of cases that feature completely masks the clinical picture. In no one of these cases would intestinal obstruction have been suggested.

FAT NECROSIS FROM A SURGICAL STANDPOINT.

CARL BECK, M.D.

CHICAGO.

The information which we now possess in regard to fat necrosis is principally the result of the study of postmortem findings and extensive experimental work on the lower animals. On the living subject it was discovered but a limited number of times, during operations. The cases usually terminated fatally. Thus far only two cases have been recorded in the literature which recovered from this affection, although a great many cases might have recovered spontaneously without having been discovered.

Having had the good fortune to observe a case which did not terminate fatally, I am prompted to publish my observations, trusting that my remarks will add some to the knowledge of this subject. The history of the case is as follows:

Mrs. M. E., 26 years old, mother of two healthy children, had always been in good health, with the exception of an attack of jaundice six years ago, which followed an ocean trip. The jaundice was very marked, and lasted three weeks, but apparently left no permanent sequelæ. Three weeks after her last confinement, about June 1, 1901, she was attacked with a severe pain in her stomach, which lasted one day, and was relieved by injection of morphin. No jaundice; no temperature. Two weeks later another similar attack followed; pain most severe in the right hypochondriac region, radiating to both shoulders. This time it persisted for nearly thirty-six hours, but gradually disappeared. No jaundice; no temperature.

On June 20 the patient had a severe chill, vomited four times in rapid succession, and had a severe pain in the right hypochondriac region. Morphia gave slight relief. Temperature normal; no jaundice.

June 21, temperature rose to 102.4; pulse, 96.

June 22, temperature, 101; pulse, 90. Pain very much reduced. The patient having had no passage for three days, in spite of catharties, a high rectal injection, with fair result, was effected, but no stone was discovered in it.

June 23, temperature, 99.4; pulse, 90; bowels moved, but no stone was discovered.

June 24, temperature normal; pulse normal. Another passage was produced, and this time a calculus the size and shape of a split pea was found in it. It was a fragment, however, probably half of the stone, and several facets were distinctly visible on it. From this day on, the patient was apparently well, until a month later, when, on July 25, she

was attacked by a biliary colic. It began at 5 p. m., and before midnight it was so violent that the patient begged for more morphia after three-eighths of a grain had been injected. She had a very restless night, and in the morning for the first time we found the patient slightly jaundiced. Urine contained bile.

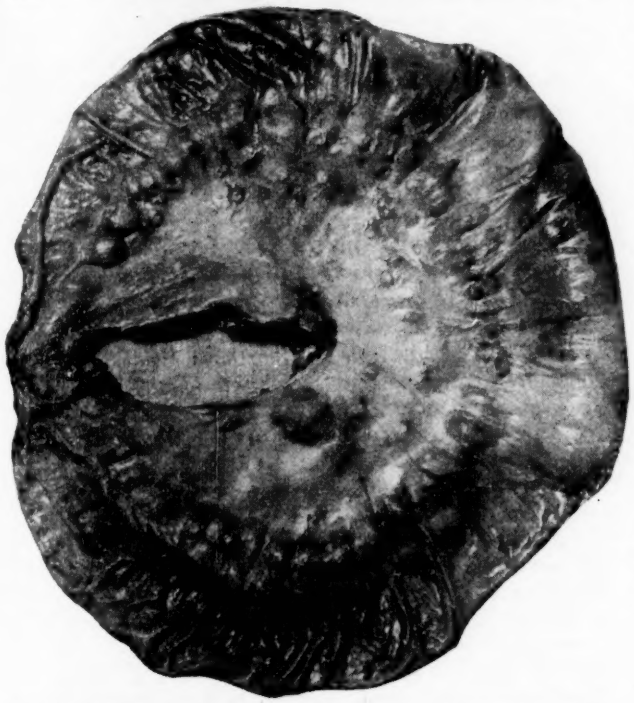

Fig. 2.—Case of Drs. Roehr and O'Byrne. A loop of intestine with small nodules of necrosis in the mesentery. Lines show some of the nodules.

Temperature rose to 99.6; pulse, 92.

July 26, the temperature rose to 101.2; pulse, 100; and the patient complained of pain in the entire abdomen, especially,

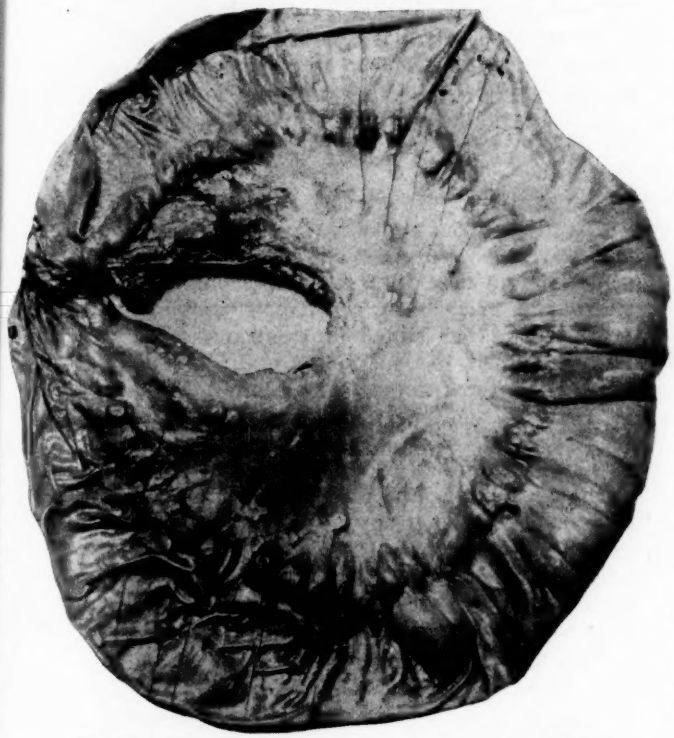

Fig. 3.—Another illustration from same case as Fig. 2.

however, in the right inguinal region. At this time the pain in the region of the gall-bladder, however, was lessened, so that palpation was possible.

July 27, the pain in the appendix territory seemed to increase. There was rigidity and sensitiveness on pressure. Temperature, 101.5; pulse, 104; jaundice very much marked. Urine dark; stools very light color, but contained no stone.

July 28, tenderness still present; temperature, 100; pulse, 96. On straining the stool, another stone, a half like the first time, was found. It would appear that inasmuch as two halves of a calculus were found, that in all probability these two were the parts of one stone, but on close examination it was evident that they could not have been parts of the same stone, and that each had to have its missing half somewhere in the bowel or gall ducts.

July 29, temperature returned to 99; pulse, 88, and the pain was also very much lessened. Jaundice also diminished.

July 30, temperature and pulse became normal; tenderness disappeared, and while we were commenting on the great change for the better, a sudden and most severe pain in the right hypochondriac region seized the patient, projectile vomiting was accompanied with the same, and after one hour the pain increased to such severity that we had to resort to chloroform anesthesia, three-eighths of a grain of morphia hypodermically having failed to produce any appreciable effect on the patient's suffering. The pain in the entire abdomen increased: there was marked tenderness, but the most sensitive point was on the left side, just below the spleen. By pressing in the region of the appendix, the pain was felt on the opposite side a little higher than the umbilicus.

On August 1, condition was not changed; temperature, 100; pulse, 92; patient vomited three times, and was cyanotic, especially around the nares and chin. In this condition she was transferred to St. Joseph's Hospital, a distance of about one mile, for operation.

There was no doubt that we had to deal with a case of gallstones, for stones were found in the stools; but we were certain that some additional pathological condition existed. The infiltration and paroxysmal pain in the right inguinal region suggested appendicitis one day, but it shifted to the opposite side the next day, leaving its former site comparatively free. How was this to be explained? The uterus and adnexa were normal, so that we excluded the pathologic condition from these sources. How is the surgeon to approach a case of this kind? Had I exposed the gall-bladder first and found gallstones in it, in all probability the fat necrosis would have escaped our notice. Having found one lesion which partially accounts for the symptoms, we are inclined to be satisfied and make no further search.

I decided first to explore the abdomen through a median incision. On opening the peritoneum, I was surprised to find the omentum as well as the peritoneum of the intestines and mesentery studded with areas of white spots, from the size of a pinhead to 5 millimeters in diameter. They were not round, like tubercles, but angular, flat, and somewhat depressed. Their color was white, which reminded one of the sprinkling of lime. At first sight I thought I had to deal with tubercular peritonitis, but a portion of the omentum was excised for microscopic examination, and it proved to be fat necrosis (Fig. 1).

In places where these necrotic areas were numerous were adhesions, and this was especially marked in the left hypogastric region and in the region of the appendix, but the appendix itself was normal. The abdomen was now closed and a separate incision was made over the gall-bladder. On opening the same two barrel-shaped stones, the size of large hazelnuts, and several small stones, among them one fractured half, corresponding to the one passed some days previously, were found. The common duct was examined and found free. The region seemed suffused with blood, so that we thought there was some hemorrhage. The gall-bladder was drained in the usual manner.

The after-treatment consisted in absolute rest to the upper digestive organs. No food or medicine was given by mouth for nine days. The entire feeding was done per rectum, and was tolerated admirably, and kept the patient in a comfortable condition. The daily amount of nourishment was 32 ounces of milk, 6 whites of eggs, and 10 grams of somatose. The draining of the gall-bladder was purposely kept open for a long time to relieve the ducts. The patient made a good recovery.

The observation of one case does not permit one to draw conclusions, but it will teach us something.

It has been remarked that gallstones have some causal connection with fat necrosis; at any rate, it is remarkable that they are so often associated. Therefore, it is advisable to watch for cases of fat necrosis and biliary colic. Certainly, the etiology can not be so simple as the hypothesis of some experimenters would indicate. A gunshot wound of the pancreas has caused extensive fat necrosis within thirty-six hours of the accident.

Clinically, diagnosis is at present almost impossible, if one will not include the possibility with every abdominal lesion. The symptoms are so indistinct that the discovery of it will come as a surprise. I thought I would recognize hereafter every case, but only a week ago I made the diagnosis of intestinal obstruction from a large umbilical hernia in a lady 74 years old. Upon opening the abdomen we found gall-bladder and pancreas necrotic, and abscess and fat necrosis. The patient died twenty-four hours after the operation. She had had no symptoms of gallstones. The shifting pain of the abdomen, the severity of the pain, which is not easily subdued by narcotics, and required chloroform in our case, the lividity or cyanosis, seem to be most suggestive in the diagnosis.

Pathological diagnosis is easy for those who have seen the condition once. The color and the shape of the necrotic areas make their recognition positive. The prognosis, according to the statistics, is very bad, but it may be that some recoveries have been overlooked.

As to the treatment, the principal points are these: We must be positive that there is no obstruction left in the gall ducts before closing the abdomen. If we regard the obstruction of the common duct as the cause of fat necrosis, we must remove the obstruction at once, and not be satisfied with simply draining the gall-bladder, or the fat necrosis will progress and kill the patient. Necrosed portions of fat, as my case proves, are likely to heal, so that in the necrosis itself, if not too extensive, there lies not the greatest danger.

Of the after-treatment of such cases, I regard it as essential to put the entire upper digestive organs to rest for at least a week, or longer, if possible.

Very Early Sign of Stenosis of the Pylorus.—Bouveret calls attention to a sign of stenosis of the pylorus which occurs in the very earliest stages, and may reveal the existence of cancer of the pylorus, while anorexia is slight and before vomiting or tumefaction have appeared. Undulation of the epigastrium is noted in the advanced stages, and is due to a clonic spasm of the gastric wall, while the new sign he describes is a tonic spasm. (*Sem. Méd.*, April 3.) If the patient reclines, the upper portion of the epigastrium is more protuberant on the left side, and is resistant on palpation. The phenomenon appears as if a rubber bulb under the skin were inflated for a few moments and then subsides as the air is expelled. This intermittent tension is never so pronounced as the epigastric undulation, and occurs only during the first few hours after eating. The two signs may blend together during the transitional period.

THE TREATMENT OF TYPHOID FEVER IN CHILDREN.

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The writer intends to advance nothing new nor original in the treatment of typhoid fever in infancy, but rather to chronicle those remedies and measures which have, in a somewhat limited experience, proven most valuable in the care of these cases. Some time ago the occurrence of typhoid fever in infancy was denied by many authorities, but numerous cases have been recorded by competent observers in the last few years, in which it has occurred in very young babies and many in children under 10 years of age. Its frequency then in infancy and childhood is generally acknowledged.

In watching the cases of typhoid fever in children coming under the writer's observation, the futility of attempting to care for them without skillful and careful nursing has early been a forcible conclusion. Absolute rest in bed in the recumbent position is the first essential in the treatment of this disease and every one familiar with children knows that this is only obtainable by the closest scrutiny and care. The little patient should be confined in bed and not allowed to be held in the lap, rocked or handled. This frequently is not possible without the assistance of a skilled nurse, to whom must be given the entire charge of the little patient, even to excluding the mother and family from the room if this quiet and rest is not otherwise obtainable. It has been our misfortune to have some spoiled and peevish children under treatment and it has never failed to happen that under the care of a nurse exclusively, the worst would be tractable and obedient. This is difficult of explanation to most mothers but not of demonstration. In such cases the attending physician must be despotic and autocratic, his patient's life depends on it. Where the child is tractable and good, and the mother has other children and other duties, the skilled nurse is more essential, as a child with typhoid needs the undivided attention of one nurse or attendant.

The treatment of this condition in childhood can well be divided, for consideration, into the dietetic, the medicinal, the hydriatic and hygienic. The dietetic treatment is a most important division,—the kind and quantity of food being a difficult problem in many cases. Milk is not suited for every case as an exclusive diet throughout the entire course of the disease; the curds, which form in larger masses than in health may, and most frequently do, act as an irritant to the inflamed area of intestines, doing the same damage that may result from solid food. If milk is the only food which can be given it must be carefully modified, a reduction being made in the percentage of proteids for children even 10 years of age. This can be easily accomplished by any of the many methods of home modification of milk. If the animal broths are given the stools are apt to be more numerous and are always decidedly more offensive than when other diet is given. These broths are not well borne unless, after having been made, they are allowed to cool and the fat is skimmed off before they are reheated and administered. The writer has had excellent results with the administration for a considerable length of time, of some of the many concentrated foods now on the market. The alternation of milk, broth and concentrated food is a

most excellent scheme. To older children butter-milk or kumyss is acceptable, but never will they be taken by young children.

The time of feeding and the quantity to be given are points to be decided only at the bedside of the individual patient. During the active stage of the disease in children, as well as in adults, I have found that but few ask for nourishment, and it is even more necessary to carefully watch the condition of the stomach in the child than the adult. Any undigested food in the action is a danger. If curds appear and milk is the chief article of diet, cut down the quantity, diminish the proteids and lengthen the intervals between feedings. To a child of 5 years, 20 to 30 ounces of milk in twenty-four hours is sufficient and he can get along with much less. Watch carefully the tongue, distension of the bowel, condition of the movements, and regulate by them the kind and quantity of food. Just here it might be well to discuss the importance of a free but proper use of hydriatic measures. The beneficial results from the internal and external use of water are seen more forcibly in children with typhoid than any other condition we have seen. Children take water internally with more freedom and less objection than do adults, and the amount which can be administered should be unstinted; the more the better. However, many patients will not take a sufficient quantity and by a sufficient quantity we mean at least one and a half to two pints in twenty-four hours. The necessary amount can be administered in the form of a saline enema into the sigmoid, the hips being elevated and the anus held to cause its retention. The rectum remains tolerant of this manipulation for many days, even when it is found necessary to repeat these enemas every day.

As to baths, we are firm advocates of their employment throughout the course of a typhoid. It should be put down as one of the axioms in the treatment of this disease that medicinal antipyretics should never be given to control the temperature of a child with typhoid; water is invariably the best antipyretic. It has been impressed upon me, however, that no set rule can be laid down and closely followed as to the frequency of the bath, the temperature for which it is to be given, the temperature of the water, whether a tub or sponge-bath, or its application in the form of a wet-pack. Should the temperature resist a cold immersion bath, a sponge-bath or a wet-pack, it will frequently be found that a cold colonic flushing will bring about the required result. Very frequently we find that warm or tepid sponging or full bath will act much better, with less temporary shock, and control the temperature longer than a cold bath used in any manner. I have on more than one occasion carried a child through a moderately severe attack of typhoid with no internal medication whatever, depending upon hydrotherapeutic measures exclusively.

This brings us to a consideration of the medicinal treatment. No regular routine treatment can be outlined, but one thing is certain, it is not possible to abort typhoid in a child, nor in adults, and the treatment is largely symptomatic. The less medication the better. We have seen but little benefit derived from the so-called antiseptic treatment and the patient is often annoyed by having to take medicine, food, water, etc., at such frequent intervals. Palatable prescriptions are of great importance in treating children and those drugs which are capable of being disguised are best chosen. The mouth should receive careful attention, the teeth being frequently cleansed of the sordes. Oral sepsis may lead to many complications in a child already depressed from the typhotoxins. This may be prevented by the use of mild antiseptics in a menstruum of glycerin acidulated with lemon juice, to which may be added a few drops of myrrh. The mouth should be washed after each feeding, especially when milk has been taken. For the diarrhea which is frequently met, bismuth subnitrate and tannalbin have given satisfactory results in the writer's hands. They are well given with aromatic syrup of rhubarb—6 minims to each teaspoonful. When there is much intestinal distension, and this symptom I have seen occur while intestinal antiseptics were being administered, this condition is best met by the use of turpentine. At best turpentine is difficult to disguise and, when impossible to administer it by the mouth, great good will be derived by the employment of turpentine stupes to the abdomen. These, when renewed frequently and applied as hot as can be borne, will greatly relieve the distension as well as the abdominal pain which may be quite severe. High enemas of normal saline solution, allowed to drain out through the rectal tube *in situ,* give some relief when the gaseous distension is of the lower bowel principally. In the flagging heart so often seen late in the disease, strychnia is the sovereign remedy and it is borne well in large doses by children. It should be given as often as every four hours at least, through the twenty-four. Whisky should be reserved until late and when given it should be with regularity and in a considerable sized dose.

To sum up, then, the treatment of typhoid fever in children: feed carefully; medicate cautiously; nurse vigilantly; bathe frequently; and give plenty of water internally.

The Blood Pressure in the Treatment of La Grippe.—Three diseases are characterized by abnormally high arterial tension—malaria, scarlet fever and cholera, and two by an abnormally low tension—catarrhal icterus and la grippe. The pathognomonic low blood pressure in la grippe seems to be due to the elective action of the infection on the nerves regulating the action of the heart. The symptoms are traceable to the resulting disturbances in the circulation, and improve as the circulation is restored to normal. This can be accomplished by the modern anti-febrile and anti-neuralgic remedies which dilate the peripheral vessels. Federn makes these announcements in the *Wiener Med. Wochenschrift* of June 15, and states that he invariably gives antipyrin or some such remedy in la grippe—both with and without fever—to dilate the peripheral vessels. This reduces their resistance and the heart, weakened by the effect of the infection on its nervous apparatus, is relieved and enabled to restore the circulation approximately to normal. He supervises the blood pressure in chronic heart disease and gives the same remedies for the same reason, watching for indications of atony of the intestines, which he combats with a purgative, fearing that it may enhance the resistance and thus add to the heart's labor. He never gives antipyretics in other febrile affections. He is convinced that high blood pressure is a primary manifestation, the cause or a factor in the production of the arteriosclerosis, and not the reverse, as usually accepted. The excitability of the vasomotor center increases with age, but the blood pressure may be normal even with pronounced arteriosclerosis, while it may be abnormally high with very slight indications of this condition.

Recent Medical Terminology.—Surely it is a work of supererogation to coin "metopantralgia" when frontal headache is all that it means; and "epicondylalgia" seems to be equally unrequired. "Gastralgokenosis" and stomachache are surely nearly synonymous!—*Brit. Med. Journal.*

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THE DIAGNOSIS OF MYOCARDITIS.

In the development of diagnostic skill excellence is judged by the ability of the physician to determine correctly the pathological process or processes. Unfortunately, it often happens that various conditions of disease produce quite similar clinical pictures. To meet this difficulty, medical science was forced to adopt many appellations that acquired great clinical value but failed absolutely to convey any definite ideas of distinct structural alterations or special defects in function. With refinement in methods of diagnosis by the adoption of laborious laboratory investigation, precise physical examination, and detailed anamnesis, greater accuracy has been attained in determining the nature of morbid conditions; names have been introduced that are applicable from both clinical and anatomical standpoints; in short, the designations of the necropsy room have been appropriated by the clinician.

Gradually many familiar and well-worn expressions that served long and faithfully have disappeared and are replaced by more exact terms. But this progress has not ended, nor is it likely that it ever will, and of all subjects those connected with chronic diseases of the myocardium are the best illustrations of this truth.

The hackneyed expressions "cardiac debility," "weak heart," "senile heart," etc., still cover a variety of conditions in the myocardium that bolder clinicians designate collectively as chronic or fibrous myocarditis, but often this diagnosis is not warranted, because there may be no increase in the amount of fibrous tissue in the heart muscle. The symptoms most characteristic of "myocarditis" and those which generally lead the clinician to make this diagnosis, are those of angina pectoris; but when dilatation follows the failure of the heart muscle to compensate for the increased amount of cicatricial tissue in its wall, the agonizing pain, tense anxiety and other features of angina may disappear. Occasional cases of angina pectoris do not show upon postmortem examination either the fibrous myocarditis or the sclerosis of the coronaries that usually precedes it; for such cases the diagnosis of myocarditis would be unwarranted as just stated. In other cases the necropsy reveals a narrowing of the coronaries at their mouths by sclerotic processes in the aorta and perhaps a slight increase of connective tissue that is only discernible with the microscope; for these cases the essential name that the condition deserves should refer rather to the faulty nutrition of the heart muscle than to the increase in fibrous stroma. The symptoms of chronic myocarditis are often simulated by an overgrowth of fat on and about the heart or by degenerative changes in the muscle fibers, or by sundry combinations of these; fatty degeneration or infiltration or both these processes may be associated with fibrous myocarditis.

With these facts before us it is gratifying to observe the broad views adopted by Biggs in his address before the Yale Medical Alumni Association upon "Some of the Clinical Aspects of Disease of the Myocardium."[1] In considering the symptomatology, he admits that there is very little that is characteristic and allows a differentiation of the morbid processes responsible for the cardiac weakness. Among other forms he recognizes an arhythmic type of disease and an asystolic form. The former is often associated with fibrous myocarditis, the latter with disease of the coronaries. Other types are tachycardiac, anginal, asthmatic and bradycardiac. Tachycardia usually accompanies a dilated heart and bradycardia may attend any form of myocardial disease.

If we are to obtain more definite clinical knowledge of the disease of the myocardium thorough co-operation between pathologists and clinicians should be instituted: their combined researches might so correlate the symptomatology of chronic diseases of the myocardium with definite fundamental conditions that in the course of time the various processes now included under "chronic myocarditis" and similar terms may be rendered susceptible of a more definite diagnosis and more intelligent treatment.

DERMOID CYSTS OR EMBRYOMAS OF THE OVARY.

As the outcome of extensive investigations concerning these interesting and important growths, especially by Wilms, it has been shown that teratomas in general and more particularly those of the ovaries and testicle are more or less complicated structures and consist of tissues and rudiments of organs derived from all of the three germinal layers. The arrangement of the tissues and organs is sometimes not unlike that in the fetus. The prominences and protuberances seen upon the cut surface of the cysts contain the various elements referred to, and it is by careful examination by means of serial sections that their complicated structure has been made clear. Not all the tissues of the human body have been demonstrated in these tumors, but careful search is increasing the number of structures found. Thus Katsurada[2] adds to the already large list cardiac muscle. External skin and its appendages; entodermal tubules and cavities corresponding either to the respiratory or to the digestive tract; hyaline cartilage, bone, teeth; glandular tissue such as mucous glands, salivary glands and thyroid gland; parts of the central nervous system, nerves and ganglia; rudimentary eyes and ears have

1. Yale Medical Journal, 1901, viii, 63.
2. Ziegler's Beiträge, 1900, xxx, 179-214.

been found more or less commonly, the ektoderm usually predominating over the entoderm. Often the tissues and parts of organs are arranged as in the human fetus. Rudimentary extremities are not so very uncommon. In one case (ovarian dermoid) Katsurada found the thyroid tissue the seat of marked pathologic changes of a colloid character, and he also found corpora amylacea in the nervous system. It thus seems quite plain that so-called ovarian dermoids really are rudimentary embryos, i. e., embryomas (Wilms).

The cause and genesis are interesting subjects to which much speculation has been given. Any parasitic theory in the ordinary sense is, of course, out of question entirely. Wilms advanced the theory that they arise from the parthenogenetic development of ova, but Bonnet,[1] in a recent critical discussion of this question of parthenogenesis, concludes that in vertebrates, including man, there is in the present state of our knowledge no justification for this hypothesis. Bandler attempted to refer all epithelial formations in ovarian dermoids to misplaced ektodermal cells, but in this way he can not account for the structures of undoubted entodermal origin in dermoids. Testicular tubules have not been found in the vicinity of ovarian embryomas, hence anomalies of that kind can not be made accountable for the growths.

Bonnet suggests the following possibilities: The fecundation by polar globules as observed in invertebrates might lead to further development between the blastomeres of an impregnated egg, and a rudimentary embryo might become included in the inner organs. Furthermore, the experiments of Driesch, Wilson, Morgan and others have shown that small embryos or larvæ may develop from isolated blastomeres of the segmenting egg of various animals. This suggests that embryomas might spring from blastomeres which were dislocated or failed to develop at the proper time and became included in territories in which differentiation had proceeded much further. Bonnet holds that there is no fundamental difference, but merely a relative one, between genuine fetal inclusions and embryomas, and he distinctly favors the idea that the latter may spring from dislocated blastomeres. This does not directly explain the much greater frequency of embryomas in the genital glands, where they may be bilateral and even multiple.

THE IDENTITY OF HUMAN AND BOVINE TUBERCLE BACILLI.

Since Koch's formal announcement of the non-interinoculability of human and bovine tuberculosis the question has naturally been raised whether such non-interinoculability is impregnable evidence of the non-identity of the causative micro-organisms. There is, however, both evidence and analogy that the organisms may, after all, be the same, though differing in pathogenic activity. No fact is better established in bacteriology than the variability in virulence of micro-organisms, which may be increased or diminished by changes in the culture medium, in the temperature to which they are exposed, in their passage through different animals, etc.

There are thus sound reasons for believing that while human tubercle bacilli may be incapable of causing tuberculosis in cattle and bovine tubercle bacilli of causing tuberculosis in human beings, the two micro-organisms may be actually identical, although differing in pathogenic activity; just in the same way as we may accept the identity of smallpox and cowpox, although these are not mutually intertransmissible, while yet reciprocally protective. Some aspects of this most important question are discussed in an interesting and judicial manner by Dr. P. Baumgarten,[1] who cites earlier observations like those recently announced by Koch pointing to the non-transmissibility of human tubercle bacilli to calves and to certain other observations proving the non-transmissibility of bovine bacilli to human beings. On the other hand, it is possible to induce in cattle the classic picture of miliary tuberculosis by means of bovine tubercle bacilli and by modification of the pathogenic activity of tubercle bacilli to induce the anatomic picture of bovine tuberculosis in other animals. Besides, the two morbid processes are identical histologically and in their tendency to caseation and calcification, though perhaps in differing degree.

Finally, bovine tuberculosis exhibits a typical reaction to tuberculin prepared from human tubercle bacilli. It may, therefore, be concluded that the bacilli of human and of bovine tuberculosis are identical, and although the danger of animal infection from human beings and likewise that of human infection from cattle and other lower animals may be slight, it can not be entirely ignored, and the precautions that we have in the past learned to observe should not in the future be relaxed.

1. Ergebnisse der Anat. u. Entwickelungsgeschfchte, 1900, Monatsh. f. Gebh., 1901.

THE TREATMENT OF ERYSIPELAS WITH THE SERUM OF ERYSIPELATOUS PATIENTS.

It seems a not unreasonable assumption that the self-limited infectious diseases should be amenable to successful treatment with the antitoxic products of their causative factors. This has been demonstrated on a large scale in the instance of diphtheria, less extensively in that of tetanus and plague, and doubtfully in that of streptococcus infection, pneumonia, typhoid fever and dysentery. Erysipelas is dependent upon a streptococcus, which it is thought is identical with or closely related to the streptococcus pyogenes. Any immunity conferred by an attack of this disease must be brief, as the attack appears to predispose to rather than confer protection against subsequent attacks. It is true that some French observers have reported favorable results in the treatment of erysipelas with antistreptococcic serum, but this experience has not been universal.

1. Berliner Klinische Wochenschrift, Sept. 2, 1901, p. 894: see abstract in THE JOURNAL A. M. A., Oct. 19, 1901, p. 1071.

Believing that the antitoxins of erysipelas are retained for but a short time in the bodies of those suffering from the disease, Valentin Jez[1] was led to employ the serum from such patients in the treatment of the disease. From the median vein he abstracted several grams of blood by means of a syringe, and of the serum obtained after sedimentation in a cool place he injected from 1 to 10 grams in accordance with the severity of the case. The injection was followed within an hour by elevation of temperature, which, however, subsequently declined, until within from twenty-four to thirty-six hours it had become normal. The local condition improved correspondingly. Should improvement not have taken place a larger amount of serum may be injected. In some instances the serum obtained from blisters, induced artificially, was employed in doses of from 5 to 20 grams. As considerable quantities of serum were thus required, an effort was made to increase its potency by oxidation. To this end the serum was mixed with an equal part of hydrogen dioxid and the mixture permitted to stand twelve hours before being used. The results, however, were not so good as followed employment of the native serum; and the same statement is applicable to other modifications that were tried.

The treatment was employed only in ten cases, and it is admitted that this number is too small to base trustworthy conclusions upon. Apart from this fact, the injection into a patient of serum obtained from his own body does not commend itself on general principles, although, as there is no inherent difficulty in or objection to the method, its employment may be sanctioned in order to determine whether it is really capable of effecting the desired result. It is thought that in this way the tissues of the organism are stimulated to increased activity rather than that any antitoxic effect is induced. The number of leucocytes in the blood and the elimination of toxic products in the urine are increased.

1. Wiener Medicin. Wochenschrift, Aug. 31, 1901, p. 1617.

"BURKING" UP TO DATE.

Opie Read, in one of the metropolitan "yellow journals," says that a New Orleans "scientist" has recently visited Chicago for the purpose of establishing a suicide resort. This humanitarian from the crescent city of the South is troubled in mind on account of the unpleasant methods adopted by suicides in getting rid of their mortal belongings, and therefore proposes to open a place where death can be had instantaneously and painlessly amid charming surroundings. The only condition is that the would-be suicide shall sign a paper giving his body to the proprietor of the establishment for the benefit of science. Then, seated in a luxurious chair, he will touch a button "and eternity does the rest." There are, according to the statement of this individual as quoted by Mr. Opie Read, twenty-three suicide clubs in the country, and the New Orleans philanthropist has sent his circulars to each, anticipating a liberal patronage. The publication of such an article by a well-known writer is a queer sign of the times. He offers it as a report of facts, without comment, over his own name and with his picture attached, though it has the appearance of a rather rank fabrication. If there were any truth in it, it would be a good subject for an early police investigation and this applies to the alleged suicide clubs mentioned by the alleged "scientist." The publication seems to infer that assisted suicide is a perfectly permissible performance and that there is even a "scientific" utilization of its results. To call it demoralizing is the very mildest kind of criticism.

HAVANA'S HEALTHFULNESS.

The health department of Havana and its suburbs, under the military government of Cuba, is making records. The report for the month of September just received shows a total of 339 deaths, a death rate for the city of only 15.64, a lower figure than New York or Berlin can show for the same period and a very respectable index of healthfulness for any city. The lowest number of deaths for any previous month was 496 in 1899, and the average since 1889, 875.45. Yellow fever, which has averaged 70 deaths each September for the last eleven years and never before had less than 18 victims in the month, this year had only two. Taking the yellow fever year as commencing April 1, there has been an average of 296 deaths each year between that date and the first of October; this year there were only 5. This year, since March 1, the department has had 100 men constantly employed in killing mosquitoes in every known fashion and the above result is, in its way, another experimental proof of their agency in the transmission of the disease. It is not only yellow fever that these measures have prevented; the mortality from malaria has been also reduced nearly 70 per cent. While yellow fever, malarial fever, and to a less extent tuberculosis, are the three diseases most decreased, there has been a general all-around lessening of the mortality, which is attributed to the generally improved hygienic conditions. Smallpox has apparently been wiped out; there have been no cases for over a year. Typhoid caused only seven deaths and diphtheria three. The military health authorities feel more and more confident each month that the solution of the yellow fever problem has been reached, and have little fear nowadays when a focus develops, of its spreading or becoming epidemic. The anxiety will come when the military government is removed and matters are turned over to the Cubans themselves. They have a special responsibility to this country in sanitary matters, and it is to be hoped they will duly appreciate it.

THE SAN FRANCISCO PLAGUE CASES.

There is a curious state of affairs still existing in California. According to the public health reports issued by the Marine-Hospital bureau, and to those of our correspondent, page 1198, there are still occurring cases and deaths of bubonic plague in San Francisco, the last reported on October 10. The reports of the Government commission have been accepted by the world as evidence of its existence there; the State Medical Society also recognized the fact by resolution, and there would seem to be no better established medical fact. The official report of the State Board of Health to Gov-

ernor Gage, recently published in connection with a report of a special health commission appointed by him, declares that the "evil reports of the presence of that disease in San Francisco were based upon error in diagnosis upon the part of incompetent investigators," and that plague does not exist in that city and never has had lodgment there or elsewhere in California. We have here on the authority of the State Board of Health of California that Drs. Flexner, Novy and Barker and the officials of the Marine-Hospital bureau in California, past and present, the former members of the board of health before its reorganization by the Governor, the San Francisco Health Board and the members of the State Medical Society have all been incompetent investigators. This utterance is given out under the authority of the California State Board of Health by W. P. Mathews, secretary. It would have been more satisfactory if the members of the board had individually signed this remarkable report and let the public and the profession know who they all are. They deserve to be immortalized after a fashion as men who in their self-estimation look down upon experts who are recognized as such by all the rest of the world. The members of the special health commission of Governor Gage, to whose report they added their contribution, were not so modest and we find that it consisted of six newspaper men, business managers or managing editors of San Francisco papers, one corporation lawyer and the president of an iron-works. Their qualifications as sanitary experts are not obvious; hence they obtained the backing of the state board for their report. If all this means the discontinuance of state support hereafter to sanitary measures directed against the plague it is unfortunate, but it has that appearance. The determination of the Governor that "one-sided examinations" will not be permitted, however, will be hard to enforce, if he discontinues state aid or co-operation. The United States' authorities will go on in their own way and according to their best judgment, and the medical profession and the country will indorse them.

GALLSTONES AND PANCREATITIS.

The appearance in this issue—pages 1176 and 1180—of two articles on fat necrosis in its relation to gallstones may serve to attract attention to the close associationship between cholelithiasis and inflammatory diseases of the pancreas in the course of which more or less disseminated fat necrosis may arise. The addition to the classical picture of biliary colic of certain peculiar features to which attention is directed by Dr. Beck and by Dr. Evans is certainly a point sure to interest the clinician and to stimulate him to closer study of diseases involving the region of the duodenal end of the pancreas. The intense abdominal pain and the cyanosis, especially of the abdominal walls, which Halsted found among the most striking clinical features in the now classical case, in which acute hemorrhagic pancreatitis and fat necrosis was shown by Opie to be associated with the impaction of a biliary calculus in the diverticulum of Vater,[1] may be regarded as the beginning towards the building up of the complete clinical picture of acute pancreatitis. This is accomplishable only through the careful and painstaking observation and study of the cases presenting symptoms pointing to the cholelithiasis and other lesions in the pancreatico-duodenal region as well as of acute intra-abdominal disturbances in general. In this field the clinician must endeavor to define, at least in its outlines, the clinical picture of the interesting and often widely spread lesions observed after death in such cases as those recorded by Beck and Evans. It is self-evident that the principles of rational treatment may be applied successfully only in the degree that knowledge of causation and ability to correctly diagnose during life advance. Finally, it should not be forgotten that lesions of the pancreas, mostly of an inflammatory nature, are in the end the conditions that determine fat necrosis. It would be a serious mistake to separate the study of the symptomatology and course of fat necrosis from that of the fundamental pancreatic lesion. As far as we know at the present time fat necrosis may be regarded simply as a sign of more or less severe changes in the pancreas toward the relief of which therapeutic efforts should be directed.

1. See Editorial, THE JOURNAL A. M. A., June 22, 1901, p. 1786.

COLD APPLICATIONS IN TETANUS.

The use of cold as a therapeutic measure in tetanus is not new, but it hardly receives a mention in textbooks. Its application in former times has been rather a general than a local one, ice to the spine, for example, from which Carpenter has claimed extraordinary results. Of late years, since we have learned that the disease is in its incipiency a local one, and, therefore, that local measures are important, it has been neglected, notwithstanding the fact that if it can be harmlessly employed in any case it ought to be possible to utilize it as a local remedy. The tetanus germ can not grow or sporulate at even a moderately low temperature, 55 F., and if it develops its toxins apparently at the point of entrance into the system, it would appear that a cooling application below its working temperature would be a rational therapeutic measure. Acting on this presumption Dr. Joseph G. Rogers, a well-known alienist, suggests[1] prompt local injections, deep in and around the wound, of a 20 per cent. carbolic acid solution of glycerin with a 2 per cent. of hydrochloric acid added; and reduction of local temperature of the part by immersions in ice water or ice bags to the part. The first of these measures is based upon well-known intolerance of the germ to these agents, but the latter—the application of cold—is an excellent example of medical reasoning in therapeutics which it is strange has not suggested itself to others. He supports his opinion by reporting two cases, both of pronounced traumatic tetanus to all appearance, spasms involving all the trunk and limbs, which were successfully treated by cold applications to the wounded part. In one case relief was experienced in a few hours and the symptoms ceased entirely on the fifth day of the treatment, when the patient himself removed the ice bladders and a relapse followed. This was again treated as before and in a few days recovery was complete. In neither case were drugs or other local applications employed or apparently required. These cases occurred in the Doctor's practice some years ago, and the treatment was adopted with a view to reducing

1. Indiana Medical Journal, October.

the irritability of the local nerve terminals, and he was at the time satisfied with the theory and practice. In the light of present knowledge he is inclined to ascribe the results to the effect of cold on the microbe, depressing its vitality, preventing sporulation and reducing the evolution and distribution through the blood of the poisons it generated. As a therapeutic suggestion Dr. Rogers' paper, modestly put forth as it is, is worthy of consideration. There is no reason why the treatment should not be tried in every case of traumatic tetanus, not, of course, to the exclusion of other means, but as a possibly valuable and certainly innocuous adjunct.

Medical News.

CALIFORNIA.

Southern California University Medical Department, Los Angeles, held its opening session, October 23.

Los Angeles Infirmary, formerly known as the "Sisters' Hospital," is to be enlarged at an expenditure of from $75,000 to $80,000.

Free Hospital for Consumptives.—After four years of labor, Dr. W. Jarvis Barlow, Los Angeles, has secured subscriptions of $10,500, which will be sufficient to purchase twenty-five acres of land near Los Angeles and to erect at least one cottage for the treatment of poor consumptives.

New German Hospital.—The plans for the new German Hospital, San Francisco, have been passed on by the committee of local architects, and that designed by Kollofrath and Dean has been awarded the first prize. The hospital will consist of a main building and two wings, will be in the medieval style, and will cost $200,000.

Personal.—Dr. Stanley P. Black, Los Angeles, has returned from a six months' course of study in Europe.——Dr. Charles F. Taggart, Los Angeles, the newly appointed chief surgeon of the Salt Lake Railroad, tendered a banquet to the officers of the road, October 15.——Dr. John J. Gallagher, San Francisco, has returned after several years spent in study in the East and in Europe.

GEORGIA.

Examinations.—The State Medical Board met in annual session at Atlanta, October 9, and examined 25 applicants for license to practice medicine.

Scarlet fever is reported to be prevalent in Tallapoosa and throughout Heralson County, and rigid quarantine precautions have been taken to prevent its further spread.

State Sanatorium.—The trustees of the State Sanatorium at Milledgeville met for their annual meeting, October 17. The resignations of Drs. W. A. O'Daniel and Job C. Patterson were accepted. Dr. T. O. Powell was elected superintendent; Dr. James M. Whitaker, first assistant physician, and Drs. Ladrick, M. Jones, John W. Mobley, Middleton L. Perry, N. P. Walker, Augusta, and E. M. Green, Danville, Ky., were elected assistant physicians.

ILLINOIS.

Health Board Enjoined.—The Springfield Board of Health has been enjoined from building an isolation hospital for contagious diseases in Springfield township.

Quincy City Hospital.—The new isolation hospital at Quincy, erected at a cost of $6600, was opened for patients, October 16. In case of emergency, 50 patients could be accommodated in the building.

Personal.——Dr. Mack Jones, Springfield, has moved to Sullivan.——Dr. Farinda J. Shipp, Springfield, is taking a post-graduate course at the Chicago University.——Dr. Francis M. Smiley, Kewanee, is taking post-graduate work in Chicago.——Dr. Charles Rayburn, Roseville, has located in Kewanee.——Dr. Samuel A. Graham, Waynesville, has been appointed assistant physician at the Illinois Eastern Hospital for the Insane, Kankakee.——Dr. M. M. Baumgardner, Orangeville, has located in Freeport.——Dr. Charles E. Whiteside, Moline, has returned from Europe.

Barnes Medical College in Good Standing.—In July last, as announced in these columns, Barnes Medical College of St. Louis was declared not in good standing by the Illinois State Board of Health. At the meeting of the Board on October 24 the college was restored to good standing.

Communicable Diseases.—Smallpox is reported at McLeansboro, where 21 cases exist, at Virden 4 cases, at Thayer 3 cases, at Green Ridge 3 cases, Neponset 1 case, Springfield 7 cases, Springfield Junction 10 cases and East Springfield 5 cases.——Diphtheria is reported to be epidemic in Kewanee, where there are more than 100 cases, and at Topeka, where the schools have been closed.——Scarlet fever is reported from Decatur, with 15 cases, from Joliet with 3 new cases, and from Tuscola, where several mild cases have occurred.

Chicago.

Dr. Jesse D. Payne has moved to Blakesburg, Iowa.

Personal.—Dr. Clara Ferguson, for 5 years a physician at the Cook County Asylum and Infirmary, sailed October 26 for a year's study in Vienna.

Dunning Internes Resign.—Four internes at the Cook County Institutions at Dunning have resigned, alleging the following as their reasons: No transfer or rotation of service has been made; attending staff rarely visits the hospitals; the promised laboratory has not been provided; no suitable place to hold autopsies has been provided; attendance at autopsies at other institutions is not permitted; examination of cases at the poorhouse and attendance at operations is not allowed, and because all attempts to get satisfaction have been evaded.

County Hospital Changes.—A new governing body is to be established at Cook County Hospital. An executive cabinet is to be organized, consisting of a physician from each attending staff, a senior interne from each of the different schools of medicine, and the warden. Stricter rules for the assigning of patients in regular numerical order in order that partiality may not be shown to the attending staff will also go into effect. A new rule prohibiting the reception of drunkards afflicted with delirium tremens was passed. Among the powers the committee intends to confer upon the warden is that of removing an interne for cause.

INDIANA.

Dr. Luther M. Irwin, Lafayette, was seriously injured in a runaway accident, October 17.

Scarlet fever has appeared in Jeffersonville, eight cases having been reported during the last week. Clarksville has three cases of the disease.

Vincennes Must Pay.—In the suit of Dr. James N. McCoy against the city of Vincennes for $625, services as smallpox physician during last summer, the jury has found for the plaintiff.

Fined for Illegal Practice.—S. H. Earl, Marion, charged with practicing medicine without a license, was fined $25 and costs, amounting in all to $40.50, on his plea of guilty and agreement to leave the state.

Diphtheria.—The epidemic in New Albany has subsided and it is expected that the public schools will soon be reopened. Three cases of the disease are reported from Princeton. In Stark County, on account of the prevalence of the disease, the health authorities are said to have ordered that all cats in the infected districts be killed.

IOWA.

Des Moines Isolation Hospital.—All differences about the location of the new hospital for contagious diseases have been amicably settled, and the hospital will be erected forthwith at a cost of about $7500.

Iowa Methodist Hospital.—Amended articles of incorporation of the Iowa Methodist Hospital Association have been filed with the Polk County recorder. It was decided to build a new hospital at Des Moines, four stories high, to be constructed of brick, and to accommodate 100 patients.

Personal.—Dr. Tilford L. Putnam, Shenandoah, has been appointed surgeon to the Wabash Railway.——Dr. J. H. Stanton, Harper's Ferry, has gone East to take post-graduate work.——Dr. Lewis L. Baker, Imogene, is about to locate in Minneapolis, Minn.——Our report of October 19, page 1044, that Dr. Fred. L. Wells, Des Moines, had moved, was unfounded.

KANSAS.

Smallpox.—It is reported that there are 23 cases of smallpox in the Kickapoo Indian reservation in Brown County.

Dr. Alexander Haggart, Ottawa, has been appointed cor-

oner of Franklin County, vice Dr. John G. Van Schoiack, resigned.

Examinations.—On October 1, the State Board of Medical Examination and Registration examined 40 practitioners not graduates of medical colleges and who had not practiced in the state for seven or more years.

Prosecution of the Unregistered.—The days of grace have expired and the State Board of Medical Examination and Registration now announces that it will prosecute all persons not holding certificates from the Board.

Personal.—Dr. H. D. Canfield has returned to Harveyville improved in health and will resume office practice.——Dr. Ludlow, Lindsburg, has gone East to take post-graduate work.——Dr. Ernest W. Minney, assistant physician at the State Insane Hospital, Topeka, has resigned.

Topeka Free Dispensary.—The members of the Kansas Medical College faculty who are interested in the new free dispensary are Dr. Matthew R. Mitchell, diseases of women; Dr. Frank H. Martin, assisted by Drs. Corban E. Judd and O. Portis Davis, surgery; Dr. O. Portis Davis, practice of medicine; Dr. Corban E. Judd, diseases of children, and Dr. Herbert L. Alkire, diseases of the eye, ear, nose and throat.

State Law Evadable.—The State Board of Medical Examination and Registration has discovered that the law under which it was created and under which it operated is defective, and it is doubtful whether the provision prohibiting persons who have not graduated from a reputable medical school from practicing can be enforced. It has been found that quack doctors can evade the provisions of the law which provides that physicians who do not comply with the provisions of the law must cease practicing medicine for pay. In order to convict it will be necessary for the complainant to prove that the physician received pay for his services in the case.

Prevention and Restriction of Smallpox.—In a circular letter, Dr. W. B. Swan, Topeka, secretary of the State Board of Health, says: "Local boards and authorities are strongly advised against the policy of concealment. Smallpox can not be suppressed by denying its existence. It will out more certainly than murder. Official reticence in this is not only useless to protect commercial interests and reputation, but is in the highest degree mischievous, in that it begets false confidence, which may lead the innocent and unwary into such danger as an honest announcement of the facts would have warned them to avoid. Insist upon prompt publicity in every instance."

KENTUCKY.

Typhoid Fever and Diphtheria.—Farmington has an epidemic of typhoid fever from which several deaths have occurred.——About 50 cases of diphtheria are reported from Covington.

No More Smallpox.—Dr. J. N. McCormack, Bowling Green, president of the State Board of Health, reported to the governor that smallpox, which had been so prevalent in the state last winter, had been completely stamped out, so that not a single case remained.

Free Antitoxin.—The health officer of Louisville, Dr. Maverell K. Allen, announces that the Board of Public Safety has arranged for the medical profession to obtain diphtheria antitoxin through the city hospital pharmacist, to be used where the poor are unable to purchase the same.

Sale of McDowell Building.—By order of the Circuit Court at Danville, the historic building on Second Street, known as the McDowell Building, was sold at auction on October 21, in order to effect a division of property interests of the present owners. It was here that Dr. Ephriam McDowell performed the first successful ovariotomy. Efforts have been made in the past by the Central Kentucky Medical Association to purchase the building and alter it as a suitable meeting place for the society, but without success. The growth of the town has left it in an undesirable location.

MARYLAND.

Sanatorium for Consumptives.—At the annual session of the staff of the Endowood Sanatorium for Consumptives, Baltimore, held October 25, Dr. G. Milton Linthicum was elected chairman and Dr. Frank Rich, secretary. Dr. H. Warren Buckler was added to the staff.

Suit Against Sanitary Officer.—Dr. Richard C. Massenburg has instituted suit against R. E. Lee Bosley, sanitary officer of Towson, Baltimore County, for $10,000 damages for alleged slander in stating that the unsanitary condition of his premises in the town is the cause of a case of typhoid fever.

Northeastern Dispensary.—The following have been elected as the staff of the Northeastern Dispensary, Baltimore; Drs. A. D. McConachie, J. Whitridge Williams, S. Rosenheim, S. H. Likes, W. B. Pearce, C. N. Branin, G. C. E. Vogeler, J. C. Beck, Percy E. Lilly, Daniel L. Dunott, T. A. Guier and George E. Starr.

Personal.—Dr. William Osler entertained Professor Wilhelm Waldeyer, of the University of Berlin, October 22. Many of the profession were present.——Dr. Jackson Piper will sail with his family for Europe, November 23, and will spend the winter there.——The Faculty of the Maryland Medical College tendered a reception on October 24 to the ladies who got up the recent bazaar for their hospital. A handsome chair offered to the most popular doctor was awarded to Dr. I William Funk.——Dr. Robert T. Wilson has been re-elected president of the Hospital Relief Association of Maryland.

MASSACHUSETTS.

Resolutions Regarding Dr. Merchant.—The Hampden Medical Society, at its meeting in Springfield, October 15, passed resolutions of respect to the memory of its late member, Dr. Harry A. Merchant, Monson.

Scarlet Fever and Diphtheria.—Scarlet fever is epidemic in Rochdale, where the public schools have been closed.——At South Hadley Falls, diphtheria is decreasing, but it is feared the failure to observe strict quarantine may result in another increase of the disease.

Personal.—Dr. Hiram H. Burns, Athol, has sold his property to Dr. A. L. Swain, Washington, D. C., and will locate in Plymouth.——Dr. Byron W. McKeen, Cochituate, has moved to Saxonville.——Dr. Thomas J. Cronin, Webster, has disposed of his practice to Dr. Arthur D. Bush, Boston, and will study in Vienna.——Dr. Walter N. Sharp, Saxonville, has moved to the west.——Dr. D. B. Sullivan has opened an office in Bondsville.

MICHIGAN.

Diphtheria is reported to be epidemic in Belleville and in Ionia and Iosco Counties.

The Physicians' Mutual Aid and Protective Association has been organized at Muskegon. The object of the association is to prevent imposition on physicians and to enforce payment of bills.

Bacteriologic Building.—A building is to be constructed at the State Agricultural College, Lansing, to be used exclusively for bacteriologic and research work, the cost to be $50,000, exclusive of equipment.

Conference of Health Officers.—The fifth general conference of the health officers of Michigan will be held at Ann Arbor, November 21 and 22. Secretary Baker, of the State Board of Health, has issued a circular urging the common councils of cities and villages to see that they are represented at the meeting. Representatives of the army and navy medical departments will be present.

MINNESOTA.

Diphtheria.—An excess of diphtheria is reported from St. Paul, and the disease has invaded Roseau County.

Personal.—Dr. Mathias H. Cremer and family, Mazeppa, have returned from a three months' visit to Sparta, Wis.——Dr. Hacking, Wood Lake, has moved to Granite Falls.

For Aged and Consumptives.—An infirmary for the use of tuberculous patients and the aged and infirm will be located at the Workhouse grounds, Minneapolis. The plans call for two buildings to cost not more than $20,000.

Smallpox is reported at Brownton, at Pelican Rapids, where the schools have been closed, and at Spring Valley. The fortnightly report of the State Board of Health shows an increase of more than 100 per cent. in the new cases reported as compared with the previous report. A total of 134 cases were reported, embracing 34 localities in 26 counties.

MONTANA.

St. Luke's Hospital, Livingston, has been incorporated by the Bishop of Montana, Drs. Robert D. Alton, William F. Cogawell, and Byron L. Pampel, and others.

Practitioner Arrested.—One of the pioneer physicians of the state was arrested, October 10, at Butte, charged with "maliciously and knowingly carrying on a business or profes-

sion without first having obtained a license from the county treasurer so to do."

Licenses were granted by the State Board of Medical Examiners to 17 out of 27 applicants who were examined, October 2. One woman passed the examination. Two Chinese applicants appeared, but were not granted licenses. One applicant was refused license because he used notes during the examination.

Personal.—Dr. Edgar A. Brooke, Dillon, has moved to Missoula.——Dr. Joseph Weyerhorst, Butte, has been found guilty of practicing without a license from the county treasurer and fined one dollar and costs.——Dr. R. O. Blades, Pipestone Springs, has returned to Hot Springs, Ark.——A physician of Butte was arrested, October 10, for neglecting to report a case of diphtheria.——Dr. G. Leo Hagen Burger, Helena, has returned from the East and has resumed practice.

NEW YORK.

Personal.—Dr. Arthur M. Whaley, Buffalo, has moved to Sault Ste. Marie, Mich.——Dr. H. I. Van Hoeson, Truxton, has given up practice and moved to Tully.——Dr. Willis C. Cook, Brockport, has sold his home and practice to Dr. Lindsey, of Little Falls.——Dr. Charles W. Southworth, Forestville, has sold his stock, practice and goodwill to Dr. Gleeten, Silver Creek.——Dr. Wilhelm H. Keller, Spring Valley, has opened an office in Haverstraw.

Conference of Sanitary Officers.—A hundred sanitary officers of the state met in the Assembly Chamber, Albany, October 24, and began holding a conference regarding sanitary problems. Dr. Daniel Lewis, State Health Commissioner, acted as chairman. Robert C. Taylor made an address on the powers and limitations of local health boards under the public health law. Dr. Herman M. Biggs, New York, read a paper on the attitude of health officers toward tuberculosis in the smaller cities and towns.

Transfer of Insane Patients.—The State Commission in Lunacy has begun the work of transferring the insane patients from the Blackwell Island Insane Hospital to the colony connected with the Manhattan State Hospital at Central Islip, L. I. Accommodations are to be provided within the next few months for 2500 patients. Relief will also be granted to the other New York city asylums, and in addition the commission will transfer New York patients now in the Poughkeepsie and Buffalo State hospitals to the new colony buildings.

New York City.

St. Luke's Hospital, during the fiscal year just ended, treated 2918 patients, gave 90,695 days' treatment and accumulated a deficit of $50,629 51.

Jewish Hospital.—The State Board of Charities has voted to approve the incorporation of the Jewish Hospital which was organized in Brooklyn, October 15.

Hospitals Crowded.—The up-town hospitals are taxed to their limit so that they are daily turning away patients for lack of room and transferring patients by hundreds to the less congested hospitals down town.

Personal.—Dr. Rupert Folger, Whitestone, Borough of Queens, was seriously injured in a runaway accident, October 17.——Dr. William E. Young has been appointed examining physician for the Outdoor Poor Department of Bellevue Hospital, vice Dr. Horace Bigelow, deceased.

City Consumptive Hospital.—The buildings on Blackwells' Island now used in connection with the Manhattan State Hospital, in which are quartered 850 insane patients, will soon be turned over to New York City by the State Commission in Lunacy. It is understood that the city authorities contemplate using these buildings for a city consumptive hospital. The State Board of Health believes that this will be a move in the right direction, as the proportion of deaths from consumption in New York City is greater than in any other part of the state.

NORTH DAKOTA.

The new hospital at Oakes is finished and already has several patients.

Admitted to Practice.—The State Board of Medical Examiners admitted to practice, October 15, ten out of the fifteen who took the examination October 1.

Personal.—Dr. Henry H. Healy, president of the State Board of Health, has decided to move from Michigan City to Fargo.——Dr. George R. Moore, house surgeon of St. John's Hospital, Fargo, has located in Montgomery, Minn.

Fargo Isolation Hospital.—The detention hospital which is being erected near Cass County Hospital is approaching completion so that the city and county will be in position to care for cases which may need to be placed there. There will be accommodation for about thirty patients.

OHIO.

Medical Research.—The directors of the Rockefeller Institute for Medical Research at a meeting held in New York, October 12, appropriated $500 for research to be carried on in the pathological laboratory of Western Reserve Medical College, Cleveland, under the direction of Dr. William T. Howard, Jr., professor of pathology. The research will be prosecuted by Dr. Roger G. Perkins.

Abolishes Pay Wards.—The City Hospital Board of Trustees, Cincinnati, Monday evening decided to abolish the pay ward of the institution, as its maintenance was found to be unconstitutional and proved an extra expense. The number of internes was increased from twelve to thirteen. Dr. John E. Griewe, clinical direector, and Dr. David I. Wolfstein, neuropathologist, were given authority to establish post-graduate classes in pathology and bacteriology in the new hospital laboratory.

Illegal Practice.—W. H. Wagner, a herb vendor, of Portsmouth, has been arrested on the charge of practice of medicine without license.——"Dr." Adah S. Horman, Cincinnati, charged with misuse of the mails with intent to defraud, has been sentenced to 18 months' imprisonment in the State Penitentiary and to pay a fine of $500 and costs. The indictment of Dr. Roberts Erskine, Youngstown, for practicing medicine without license has been quashed on the ground that the indictment did not contain the name of the prosecuting witness.

PENNSYLVANIA.

Personal.—Dr. Thomas W. Moran, Stahlstown, has located in Latrobe.——Dr. John W. Denison, Parsons, has gone to Hazleton to take charge of the isolation hospital.

Kensington Hospital for Women, Philadelphia, during the fiscal year just closed, cared for 834 patients, gave 10,514 days of treatment, and 601 operations were performed.

Gift to Hospital.—An operating pavilion, erected at a cost of $16,000, has been presented to St. Luke's Hospital, South Bethlehem, by Samuel Thomas, of Catasauqua, in memory of his wife.

Contagious Diseases.—Diphtheria is ravaging Forrestville and the public schools have been closed. A case has been reported in Charleroi. It is reported as epidemic in Pinerton, Sherett and Adrian, near Red Bank, and at Helm school near Montgomeryville.——Scarlet fever is reported to be epidemic in Erie, Bedminster and Washington, where a public school has been closed.——Measles has caused the public school at Passer to be closed.

TEXAS.

The University of Texas Medical Department, Galveston, held its eleventh annual opening exercises, October 1. The attendance is about 50 per cent. greater than last year.

The University of Dallas Medical Department, Dallas, held its opening exercises, October 1. President, Dr. Samuel H. Stout; Dr. Charles M. Rosser, dean of the faculty; Dr. Thomas D. Wooten, Austin, and President Oscar H. Cooper, of Baylor University, addressed the assembly, and a reception followed.

Smallpox is reported from Austin. At least 20 cases have been reported and quarantine is not strictly enforced.——Work has again been resumed on the All Saints' Charity Hospital building at Fort Worth.——The New Protestant Sanitarium at Fort Worth will soon be opened for the reception of patients. The finishing touches are now being placed on it.

Personal.—Dr. W. F. Blount, state quarantine and health officer, has resigned his position on account of failing health, and has moved to his former home at Flatonia.——Dr. George R. Tabor, of Bryan, has been appointed his successor, and will take charge of the office at once.——Dr. Isaac J. Jones, Austin, has retired from the position of assistant state health officer.——Dr. Robert H. Harrison, Sr., Columbus, was the recipient of a most beautiful gold-headed ebony cane, October 21, the gift of the East Texas Surgical Society, as a token of its appreciation of his services in behalf of the medical sciences at large.

UTAH.

Dr. Theodore B. Beatty, Salt Lake City, has returned from a five weeks' trip to the Puget Sound country.

Certificates of practice were given by the State Board of Medical Examiners, October 8, to seven applicants.

Salt Lake City's Morbidity.—There were 31 cases of typhoid fever in Salt Lake City, October 13, an increase of 15 during the week; 37 cases of scarlet fever; 6 of diphtheria and 3 of smallpox.

Revocation of License.—The members of the Salt Lake Medical Society have asked the State Board of Medical Examiners to revoke the license of Dr. Edward S. Payne, charged on two counts with performing criminal abortion.

Another Medical College Proposed.—Drs. Harry N. Mayo, Emerson F. Root, Rufus L. McElroy and others held a meeting in Salt Lake City, October 22, to consider the establishment of a medical school in that city. It is proposed to open the school next September.

VIRGINIA.

University College of Medicine, Richmond, opened, October 1, with more than 200 students.

The Medical College of Virginia, Richmond, opened with an attendance of about 150, October 1. Dr. Christopher Tompkins delivered the opening address.

Raise the Standard.—The faculty of the University College of Medicine, Richmond, has passed a regulation providing that in the future this institution will not give credit of one year in the medical course, simply because a student has received an academic degree.

Personal.—Dr. J. Garnet Nelson, Alexandria, has located in Richmond and will be associated with Dr. Charles V. Carrington.——Dr. William R. Jones has returned to Richmond after two months at Rockbridge Alum Springs.——Dr. A. M. Fauntleroy, Staunton, has passed the Naval Medical Board examination in New York.——Dr. Charles L. Siegel, Richmond, has gone to Colorado for his health.——Dr. F. E. Walker has located in Pamplin City.

WASHINGTON.

Quacks Fined.—The "Quaker Doctors" itinerant medicine vendors, were recently fined $120 and costs in North Yakima for violation of the state pharmacy law.

Smallpox, Diphtheria and Scarlet Fever.—Smallpox, in a mild form thus far, is prevalent at Mud Bay; diphtheria is reported in Ravenna Park, a suburb of Seattle, and scarlet fever in Seattle.

Examination.—The State Board of Medical Examiners will hold its next meeting in Tacoma, January 7, 1902, at which time those desiring a license to practice medicine in the state of Washington will have an opportunity to take the examination, which it is necessary to pass before they can practice.

New Hospitals.—The addition to the Everett Hospital, two stories high and with sixteen rooms, will be ready for occupancy early in December.——Sick quarters at the Puget Sound Navy Yard are to be erected at a cost of $6900.——It is rumored that a hospital will be erected in Tacoma for the Northern Pacific Mutual Benefit Association.

Personal.—Dr. Isaac M. Harrison, Seattle, has qualified as a member of the local board of health.——Dr. C. E. Martin, Linden, has moved to South Bend.——Dr. Elmer E. Heg, Seattle, has resigned his position as member of the Board of Health, on the ground that his residence in the city was not sufficient to render him eligible.——Lieut. Frank B. Morse, assistant surgeon, U. S. Army, has been ordered to Fort Walla Walla from the Presidio of San Francisco.

WISCONSIN.

Diphtheria and Scarlet Fever.—The epidemic of diphtheria in Peshtigo is subsiding, but the schools are still closed.——Scarlet fever has caused the closure of the schools of Pleasant Prairie.

Illegal Practice.—Fred L. Mehrtens, "magnetic healer," of Ripon, was convicted of practicing medicine without a license and fined $25 and costs, with the alternative of thirty days' imprisonment.

Fewer Applicants.—The State Board of Medical Examiners found only 22 applicants awaiting it at Oshkosh. The decrease in numbers is due, it is thought, to the rigidity of the examination.

Smallpox.—The epidemic on the Bad River Reservation at Odanah, is increasing. Of the 120 original patients nearly all have recovered, but on October 23 the disease appeared among the adults in virulent form, 15 cases being reported.——At Little Suamico, Spruce and Wequoick, cases have also been reported.

Personal.—Dr. Charles F. Lehukering, Shullsburg, has associated himself with Dr. Charles H. Russell, Darlington.——Dr. G. A. Larson, Westby, has moved to Cashton, where he will be associated with Dr. Cornelius H. Cremer.——Dr. George H. Bacon, Reeseville, is taking charge of the practice of Dr. Robert E. Calhoun, Chesterville, Ill.

GENERAL.

New Electro-Therapeutic Journal.—The *Electro-Therapeutics*, a journal devoted to medical electricity and radiography, has been announced by its publishers, A. L. Chatterton & Co., New York City. Dr. William Benham Snow is to be the editor.

Operation on President McKinley.—The *Gazette Méd. de Paris* concludes an editorial on this subject with the words: "Great praise is due to the American surgeons who accomplished their intervention with the greatest sang-froid and the greatest rapidity. They did their entire duty. Extramedical influences are probably responsible for the optimistic bulletins issued at first."

The Women's Hospital at Manila, P. I.—This hospital is now open and ready to receive patients. It is temporarily located in a 20-room house. The building has been almost reconstructed, painted and thoroughly fitted up as a modern hospital. This was made possible by a series of donations which Mrs. Whitelaw Reid started with $5000. The operating room has been arranged and furnished with modern devices.

Physicians Honored by Yale.—The University of Yale conferred, at its recent bicentennial celebration, the honorary degree of LL.D. upon Dr. John Shaw Billings, director of the New York Public Library; Dr. David White Finlay, professor of the practice of medicine in Aberdeen University; Dr. William Osler, of Johns Hopkins University; Dr. Ira Remsen, president of Johns Hopkins University, and Dr. Wilhelm Waldeyer, professor of anatomy in the University of Berlin.

Alvarenga Prize.—The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Senor Alvarenga, and amounting to about $180, will be made on July 14, 1902, provided that an essay deemed by the committee of award to be worthy of the prize shall have been offered. Essays intended for competition may be upon any subject in Medicine, but cannot have been published, and must be received by the Secretary of the College on or before May 1, 1902.

Resolutions on Pathophorous Money.—The Minnesota State Board of Health has adopted the following among other resolutions relating to smallpox: Resolved, That all employers of laborers withhold from such employes who may become infected with a contagious disease, and to whom a salary is due at the time of such infection, all monies or wages due him until his discharge from the hospital or place of detention; that monies or wages be withheld from any such employes with suspicious symptoms until the diagnosis of the disease has been determined by a competent physician.

Manila Physicians Organize.—The following announcement was issued by the Manila Board of Health, September 11: "At the request of a number of medical men of this city, the Board of Health cordially invites all registered physicians of Manila and vicinity, including medical officers of the Army, Navy and Marine-Hospital Service, to attend a meeting to be held in the Sessions Hall, Ayuntamiento, at 8:30 p.m., Saturday evening, September 14, for the purpose of organizing a medical society. The co-operation and presence of physicians of all nationalities are earnestly desired."

The Craig Colony Prize for Original Research in Epilepsy.—Dr. Frederick Peterson, 4 West Fiftieth Street, New York City, offers a prize of $200 for the best original unpublished contribution to the pathology and treatment of epilepsy. Originality is the main condition. All manuscript should be submitted in English. The prize is open to universal competition. Each essay must be accompanied by a sealed envelope, containing the name and address of the author and bearing upon the outside a motto or device, which is to be inscribed also upon the essay. All papers received will be submitted to a committee, consisting of three members of the New York Neurological Society, and the award will be made upon its recommendation at the annual meeting of the Board of Managers of the Craig Colony, October 14, 1902.

Health of Army Good.—Surgeon-General Sternberg, in his annual report to the Secretary of War, says that the health of the army has been unusually good during the calendar year 1900. The admission rate to hospitals from all causes, volunteers and regulars, with a mean strength of 100,389 in 1900, was 2,311.8 per thousand of strength as compared with 2,178.1 in the previous year. In the Philippine Islands, with a mean strength of 66,882, the admission rate was 2,621.96, as compared with 2,395.52 in the previous year, this increase being mainly due to disease among the volunteers, the ratio for which rose from 1,859.21 to 2,761.79. The death rate in China was large, 47.76 per thousand of strength, 23.62 from disease and 24.14 from injury. The health of the troops in Cuba during the year was excellent. As a result of American occupation nearly every city and town has had its sanitary condition improved.

The Association of Physicians Speaking French.—The organization of this new medical association, "des Médecins de langue francaise de l'Amerique du Nord" has met with some opposition, but its success seems now to be assured. The first meeting will be held at Quebec in 1902, in honor of the semi-centennial of the founding of Laval University. French-speaking physicians do not feel at home in congresses and associations where English alone is spoken. They are puzzled by the imperfectly understood language and unable to express their own ideas, the *Bulletin Médical de Quebec* editorially observes. In a homogeneous association, where they can speak in their mother tongue as they learned it in the schools of Canada, in the Canadian colleges and universities where only French is spoken, they will enter into scientific emulation with their English-speaking confrères and be able to present their scientific achievements in a favorable light. The association will welcome members of any nationality or tongue, but the addresses and discussions must be in French. There are more than 2000 French-speaking confrères in North America from whom the Association expects to be recruited.

CANADA.

British Columbia's Insane.—A return received at the Census Department gives the total number of inmates of the Provincial Insane Asylum of British Columbia at 263. Twenty-six of these are Chinese, and three, Japanese.

Trinity University.—As a result of the meeting of the Board of Endowment and Finance last week a special appeal will be made to raise a fund of $500,000. Of this sum $60,000 has already been subscribed by five members of the Corporation.

Personal.—Dr. Law, of Ottawa, has been appointed medical health officer of that city, Dr. Robillard, who has been health officer for twenty years, having resigned.——Dr. J. E. Craik, a graduate of McGill, has been appointed resident physician at the Isolation Hospital, Porter's Island, Ottawa.

Toronto General Hospital Nurses.—The graduating exercises of the Training School were held at the Toronto General Hospital on the evening of October 25, when a very large class was graduated. The first class was sent out from the institution in 1883, and was five in number. Since that time a total of 347 had received diplomas from this training school.

Smallpox in Quebec.—The smallpox epidemic in the Province of Quebec continues to spread, and the disease has invaded several schools and colleges. It is said that the country physicians refuse to recognize the diagnosis of the provincial board of health in many cases, and the people rely on them, and as a consequence the contagion continues to spread. The present outbreak appears to be of a very mild order.

Raising Standards at McGill.—The Faculty of Applied Science at McGill has posted the following notice on the college boards: "It has been decided by the Faculty that the number of marks required for pass-standing in any subject shall be 40 per cent.; for second-class honors, 60 per cent.; for first-class honors, 80 per cent." The medical standing will also be raised in the near future, and there is a likelihood of increasing the term from one of four sessions of nine months each, to one of five sessions of nine months each.

Fellows for Medical Research.—The Faculty of Medicine at McGill has appointed Dr. G. A. Charlton, of Montreal, and Dr. P. G. Wooley, of Johns Hopkins University, research fellows in pathology. They will work under Professor Adami of the Pathologic Department, and their special work will be to discover means to combat the spread of infectious diseases. Dr. Ford, who was some time ago appointed to the Rockefeller Research Scholarship at McGill, and who has been studying at the Pasteur Institute, Paris, will commence his work at McGill in the near future. The alterations and additions in the medical department will soon be completed.

Toronto Western Hospital.—The annual meeting of this institution was held recently, and the reports show very satisfactory progress. The Toronto Western Hospital was organized in 1896, as it was felt that there was a distinct field for hospital work in the western section of the city. In 1899 a fine site was secured on Bathurst Street, a handsome residence with four acres of fine lawns. Since that date the capacity of the hospital has grown from 30 to 90 beds. By special act of the legislature, the institution has been incorporated, and liberal powers and privileges conferred upon it. Particularly has great progress been made in the Training School for Nurses. The election of officers resulted in Dr. A. A. Macdonald being chosen dean; Dr. John Ferguson, secretary; Dr. J. B. Gullen, treasurer; Dr. Geo. H. Carveth, chairman of the management committee, and Dr. J. McCullough, medical superintendent.

FOREIGN.

Kaiser Wilhelm Honors His Surgeon-General.—The German emperor has conferred upon Surgeon-General Koch the rank of Major-General.

Plague at Naples Eradicated.—Out of about fifteen to twenty cases only eight died. The last case was reported October 5. The authorities claim that not a trace now exists in the neighborhood.

Plague at Liverpool.—There were two deaths from bubonic plague at Liverpool during October, according to the local government board. Bacteriological tests made after death confirmed the diagnosis.

The Virchow Celebration.—Fifty delegates from foreign medical and other scientific societies were present at the festivities. The list included Lister, Baccilli, Cornil, Hansen and Podwyssotzky. The Virchow Fund was increased by 50,000 marks from general contributions, with an additional 100,000 marks from the City of Berlin, thus swelling the fund by nearly $37,500. The Berlin Medical Society announced its intention to erect a building for scientific reunions to be known as the Virchow-Haus. It presented a souvenir volume of its transaction since its foundation, which showed that Virchow had presented communications or engaged in discussions 587 times, besides serving as president for twenty years. The new public hospital now being constructed in Berlin is to be formally dedicated as the "Rudolf Virchow Krankenhaus." Our French exchanges refer with pride to the similar apotheosis of Pasteur nine years ago, and observe that Virchow's familiarity with several other languages besides his mother tongue renders him at home wherever he goes and has undoubtedly been an important factor in his international reputation.

LONDON LETTER.

The Smallpox Outbreak.

The number of cases of smallpox now under treatment has fallen to 169, but fresh cases occur every day. As many as 10 have been reported in one day, but of late the number has been only about 2. The difficulties of checking the spread of the disease are manifold. Thus in Kent, where it is the custom of a large number of the poorer classes of London to resort yearly for a few weeks' hop picking, the disease has occurred in the temporary huts erected for the workers. The great neglect of vaccination in London, previously referred to in THE JOURNAL, is illustrated by the following occurrence: A girl, aged 12, the daughter of a coal-porter, came home from school ill with headache. On the fourth day the mother observed a rash and called in a doctor, but on his arrival the child was dead. The disease proved to be smallpox. Six other children of the family have since been removed to hospital suffering from the disease. None of them were vaccinated.

Army Medical Reform.

A new building has just been opened in connection with the Post-Graduate College of the West London Hospital. Presiding at the inauguration ceremony, Sir William MacCormac referred to the large number of officers serving in South Africa who had attended the College with advantage. Many had written in grateful acknowledgment of the value of the training. He approved of the recommendations of the committee appointed by the Secretary of State, which have been already published in these columns. When the medical history of the war would be written he was confident that the results would bear comparison with those of any other war. Much of the distress was unavoidable both on account of the state of war

and the vast field of operations, the long and difficult transport, and the undermanned medical service. He trusted that the changes promised would draw into the Army Medical Service sufficient young men of good quality and promise. He wished some means would be devised of removing the Army Medical School from Netley and bringing it to London, where there would be the constant stimulus of competition and criticism, and the benefit of the unrivaled teaching and clinical opportunities that London offered. He advocated a scheme similar to that of the Kaiser Wilhelm Institute in Berlin, which would enable a number of officers to be attached for duty and yet able to spare time for special study.

Tuberculosis Commission.

The work of this commission has already begun, with a view to testing the truth of Prof. Koch's theory as to the non-transmission of bovine tuberculosis. Prominent among those who are making experiments is Prof. Boyce, of Liverpool. Most of the members are working in their laboratories. It is supposed that the government will provide a farm for the experiments and that the question will be settled in about a year.

Displaced Strangulated Hernia.

At the Clinical Society Mr. Thomas Bryant described the following remarkable case. A woman, aged 32, had femoral hernia for five years and did not wear a truss. She often used force in reducing the rupture, and did so particularly two days before her illness. Vomiting began and became stercoraceous in three days, and she was in an extreme state of collapse. The abdomen was distended but not tense, and there was no swelling in the right femoral region—the alleged seat of the hernia, although pressure with the finger over the femoral canal elicited pain. An exploratory operation was, however, performed. The crural sheath, which did not seem expanded, was opened. A small piece of tissue, which looked like omentum, was seen. The femoral ring was quite clear. On passing a director it was slightly enlarged upwards and inwards and a piece of pale intestine which had been collapsed and invisible became distended and visible. It passed downwards through a narrow opening at the apex of the femoral sheath, an inch or an inch and a half below the femoral ring. At this point the bowel was strongly held and strangulated. On dividing this ring 4 or 5 inches of highly congested intestine were drawn out of a space situated below and to the inner side of the opening in the femoral sheath and reduced. The operation was completed, but as was expected, the patient died in a few hours. The necropsy showed that the sac had been forced through a rupture of the femoral sheath at its lowest part into the connective tissue of the thigh on the inner side of Scarpa's triangle. The seat of strangulation was at the orifice through which the intestine was forced.

Mr. Bryant had never seen or heard of a femoral hernia being displaced into the fatty connective tissue of the inner side of the thigh with the seat of strangulation an inch and a half below the femoral ring and at the mouth of the opening in the femoral canal. But for the history of an old femoral hernia there was nothing to enable the surgeon to localize the cause. An abdominal operation might have been performed and would have proved useless. The good old practice was here followed of first examining the hernial region, in every case of intestinal obstruction associated with hernia. The cause of the displacement was probably the forcible attempt at reduction by the patient. This is, therefore, an example of the third variety of displaced femoral hernia. The first is the well-recognized reduction *en masse*, in which the hernia is reduced behind the abdominal walls still strangulated. In the second a large femoral hernia by rupture of its sac shows itself as a tumor in the subcutaneous connective tissue above Poupart's ligament. In all varieties misplaced force is probably the cause. The case illustrates the aphorism: "In every variety of strangulated hernia forcible taxis is the cause of all displacements of inguinal or femoral varieties, as well as rupture of the sac or sac's contents; so forcible taxis should be avoided."

Treatment of Ascites in Hepatic Cirrhosis by Suture of Omentum to Abdominal Wall.

Mr. Mansell Moullin read notes of five cases in which he had performed this operation with a view to establishing a collateral circulation by the Drummond-Morison method. Two patients died, one four weeks after the operation, from pleurisy, the other one week after from exhaustion. In both, the operation had been performed too late. The disease was too far advanced and there was no time for the development of a collateral circulation. The three other patients were discharged relieved. One could not be traced. The other two were alive and at work at the present time, two years after the operation. As far as ascites is mechanical the operation relieves. The mortality had been high, but with better selection of cases there is no reason why it should be higher than that of exploratory laparotomy. A median incision above the umbilicus is the most convenient. Through it the whole upper surface of the liver can be reached and the omentum fixed to the abdominal wall by sutures passed from its peritoneal surface. Drainage is unnecessary and increases the risk of sepsis. If the fluid collects again it may have to be drawn off—many times in a few months—until the anastomotic channels have sufficiently enlarged.

Hemorrhagic Myositis in Typhoid Fever.

At the Pathological Society, Dr. F. W. Andrews described a case of this rare complication. A young man who suffered from double chronic otorrhea died in a relapse on the fifty-second day, of typhoid fever. A day or two before death he complained of pain when turned over. A swelling was discovered in the left thigh and diagnosed as hemorrhagic. At the necropsy the vastus externus muscle was found to be the seat of hemorrhage. Many fibers showed Zenker's degeneration and large numbers of streptococci pyogenes. The infection was thought to be the cause of the hemorrhage.

PARIS LETTER.

Obstetrical Congress at Nantes. Protection of Infants.

At the Congress of Gynecology, Obstetrics and Pediatrics, held last month at Nantes, several interesting reports were made. One of the latter, by Dr. Olivier and Schmitt of Nantes, was on the protection of children. This protection should begin as soon as possible, Dr. Olivier stating that every pregnant woman should have complete rest six weeks before and six weeks after delivery. An indemnity, equal to two-thirds of the woman's salary, should be given her during that period. There is already a law in France, called the Roussel law, which provides for the medical supervision of all infants who are not under the immediate care of their parents.

The essayist declared that it would be well if infants during the first year could be examined and reported on medically every month during the winter season and every fifteen days during the summer. Professor Pinard, the well-known accoucheur, spoke of the desirability of teaching children something of the importance of taking care of their health. They should be made to understand that their own health will have a direct influence upon that of the succeeding generation. Professor Pinard considered that three months were none too long a rest for women before parturition. Premature birth sometimes took place during the seventh and eighth month. He said also that he did not favor "créches," where children are placed by mothers, who are obliged to work, because he thought it unwise to encourage this partial abandoning of the child. Professor Pozzi deprecated the tendency shown in schools to force the students to learn too much. He advised the examinations being passed at the end of each year, instead of being placed at the end of the university course. The following resolution was passed by the Congress: "All pregnant women should be placed in the best hygienic conditions during the last three months of pregnancy, and the first month following delivery, and the public authorities are called upon to find the best methods for insuring the realization of this measure of public utility.

Surgical Treatment of Uterine Cancer.

Another important subject, the surgical treatment of uterine cancer, was discussed by Monprofit, Potherat and Segond. A radical cure could only be hoped for from an early operation. Monprofit said he did not believe in very extensive operations. He began by removing the infected tissue through the vagina, tamponed with antiseptic gauze, and then removed the uterus in the same "séance." Pozzi said he agreed with Monprofit, and added that caution was necessary in extensive lesions, as the risk run by patients in such cases was out of proportion with the benefit obtained. Dr. Potherat argued that it was well to cut away from below the cancerous tissue a week before removing the uterus. Dr. Segond considered it was useless waiting so long as the vagina might get reinfected. He did not consider it advisable to perform a radical operation when the lesions were extensive. A simple operation in such cases was often of great benefit to the patient.

Discussion of Alexander's Operation.

Alexander's operation was also discussed. According to Potherat, it would seem to be the best treatment for non-

adherent deviations. Dr. Segond highly praised this operation on account of its simplicity and harmlessness. As a rule, methods which prevent the adhesion of the womb to the abdominal wall or to the adjacent organs, are to be preferred to the others. Professor Pinard made some remarks on the vomiting in pregnancy. It was always due to hepatic insufficiency.

Persistent vomiting is not seen in women who have been treated in a logical manner, and an absolute milk diet is the one and only safeguard. The pulse is the best indication as to the advisability of interrupting gestation. When it is over 100, there is danger, and when it reaches 140, the woman is lost. If after several days of absolute milk diet, the pulse remains over 100, the uterus should be emptied of its contents. Eclampsia was also discussed, Hirigoyen and Schmitt advocating in some cases manual dilatation and removal of the child when labor has set in. Dr. Pinard remarked that statistics published nowadays do not contain a sufficient number of cases, the intensity of the illness varying considerably. He did not believe in active measures, trusting more to chloroform, chloral and milk.

Haycraft's Reaction Studied by Chauffard.

Dr. Chauffard, who has succeeded to Hanot as the best known specialist in France on liver diseases, has been carrying out experiments with the help of F. X. Gouraud to test the usefulness of Haycraft's method in recognizing minute quantities of biliary products in the urine. The urine used should be quite fresh, or at least have been sterilized with a small amount of cyanid of mercury, for instance, 5 to 6 centimeters of a 2 per cent. solution. The urine should be poured into a glass, and a small amount of powdered sulphur deposited very carefully on the surface of the liquid. If there is any trace of bile in the urine, a small amount of sulphur will be precipitated. The test should last, according to Chauffard, about five minutes. This method allows one to detect the presence of biliary salts or bilerubin in a 1 to 50,000 solution, whereas Pettenkofer's test does not go beyond 1 in 1000. Fifty specimens of urine were examined, and a positive result obtained in 20 cases. Salkowski's test and the spectroscope proved the correctness of this reaction.

Bubonic Plague During a Scientific Excursion.

Bubonic plague broke out on the *Senegal*, a steamer which sailed from Marseilles on September 14, with a ship's list of 186 passengers, among whom were about 19 physicians. This steamer had been hired by the *Revue Générale des Sciences*, which had organized a scientific excursion to Asia Minor and Palestine. Two members of the crew were found affected with the plague, and the steamer had to put back to Frioul. All the passengers, with the exception of thirteen, were inoculated. Professor Terrier, Dr. Chauffard and other notable medical men were on board. The plague has since broken out in Naples, and one case of death has already taken place.

Supposed Death from Medulla Cocainization.

A few weeks ago quite a flutter was caused by the political papers publishing the report of a death which would seem to be the outcome of medullar anesthesia. A woman, suffering from a wound of the foot, had been taken to the Beaujon Hospital, subjected to Tuffier's method, and had died shortly after. It was, however, what one calls in French a "canard," showing once more the tendency on the part of the press to incriminate physicians when they can. The surgeon who had operated this patient, Dr. Lyot, wrote to the *Presse Médicale*, and showed by the observation taken of the case that death was due to acute septicemia, which the operation was unable to control. There were no symptoms of poisoning by cocain, and the autopsy revealed no indications of a wound of the spinal cord.

Dr. Crosti, who is surgeon of the Maggiore Hospital at Milan, has been undertaking some operations in Paris in Professor Reclus' service at the Laennec Hospital. Dr. Crosti has remarked that one of the important elements of Bassini's operation is often overlooked. In Bassini's operation a new inguinal canal is established, and to insure a sufficiently strong posterior wall, the fibers of the rectus, transversalis and minor obliquus are sutured to the deep part of Poupart's ligament. These fibers should be well separated from the aponeurosis of the major obliquus and subserous adipose tissue. According to Dr. Crosti silk should be used for these sutures. In some places such as Perouse, Sienna or Rome, some operators use silver wire.

Preparations for 14th International Medical Congress.

The first steps in view of the 14th Medical Congress have already been taken. Professor Julian Calleja-y-Sanchez has been chosen as president. Dr. Angel Fernandez Caro-y-Nouvilas will be secretary and Dr. Jose Gomez-y-Ama, treasurer. The fees for membership will be 30 pesetas. This congress will take place in Madrid April 23 to 30, 1903.

According to the last reports published, there have been no new cases of bubonic plague at Naples, so that the quarantine established against Naples in Rome has been removed.

Marmorek's Serum Spoken of by Bazy.

Marmorek's serum does not seem to acquire much popularity in France. One does not hear of its being used extensively by the urgeons of the hospitals, among house physicians and surgeons, whose opinions reflect and sometimes exaggerate those of their chiefs, it is looked upon with distinct disfavor. Dr. Bazy was speaking about a case which was treated by this serum, and he said he would hardly admit that the cure was due to the latter agent as no proof was given that there was streptococci infection. The observation, he remarked, proved only what can already be called a success, that the Marmorek serum is not always harmful, a statement which has sometimes been made.

Electricity in Treatment of Constipation.

Muco-membranous colitis is a disease which often enough baffles the skill of the physicians who endeavor to cure it by the routine methods of treatment. Dr. Doumer, a Belgian physician, has recently recommended electricity, the continuous current being used as a means of curing the constipation seen in such cases. One patient had suffered from this latter symptom for quite a long period of time, and clinical investigation showed that there was stenosis of the ascending colon. He was subjected to the application of a 10-milliampere current during 10 minutes. The strength of the latter was increased on the following days to 70 and 80 milliamperes, and constipation, as well as all the other morbid symptoms, disappeared completely. Five other patients treated in like manner, gave the same gratifying results. The technique of the author is as follows: Two large tampons of coal, about 6 centimeters in diameter, are covered with chamois skin, dipped in water and placed over each iliac fossa. During the first minute the current is only put up to 30 milliamperes; it is then reversed and increased sometimes to as much as 150 milliamperes. The treatment should be kept up 10 to 12 days. The conclusions of the author are as follows: Such currents are easily and safely administered and can cure long standing constipation when seen in muco-membranous colitis.

Correspondence.

Tokio as Seen by American Physicians.

TOKIO, JAPAN, Sept. 27, 1901.

To the Editor:—We are in this far away country and suppose a few observations might interest your numerous readers. Tokio, the present capital of Japan, is an interesting combination of the ancient and the modern; its foundations were laid before Columbus discovered America, and it was a great city in the beginning of the 17th century. Its population to-day is about two million. Some of its streets are as broad, as well paved and lighted as the boulevards of Chicago, and others as narrow and dark as in medieval days; tall brick and stone buildings that would do credit to any western capital have thatched roofs of a thousand years ago. The new Japan of to-day is a marvel; our own Commodore Perry held the magic wand that gave her the awakening, and her rapid strides to a higher civilization is the wonder of the age.

Our party had been in Tokio but a very short time when Baron Tomatsuri, commander and surgeon in the royal navy, called, in full regimentals, on Prof. Senn, and announced that he was detailed to attend upon him during his stay, and through him we readily gained admission to all the medical institutions of the city. He went with us through the Imperial University of Tokio, one of the products of the new Japan; it came into existence as at present, in 1886 of our calendar, 2559 of the Japanese; it was formed by the consolidation of several schools, two of which were of great antiquity.

It now consists of colleges of law, medicine, engineering, literature, science and agriculture, with a total of 2700 students.

The College of Medicine has twenty-four chairs, including three in surgery, three in medicine, one each in psychiatry, pathology, gynecology, obstetrics, ophthalmology, pediatrics, dermatology and syphilis, otology, rhinology and laryngology.

Prof. Sato, chief of the surgical department, Prof. Aoyma, of medicine, Prof. Katayamo, of psychiatry, and Prof. Muira, of pathology, were especially courteous in showing us their numerous laboratories, the wards for clinical teaching, the libraries and the excellent facilities generally for teaching. The two surgical amphitheaters surpass anything we have in Chicago for successful asepsis in public teaching. The various wards directly connected with the college contain 520 beds, the Hospital for the Insane has 340 patients, and in easy access to the students there is a hospital for infectious and contagious diseases, and one for chronic invalids. The course extends over four years of 282 days each; there are 350 students in attendance, and the last graduating class numbered 24.

The preliminary requirements are those of the entrance examinations to the University, much the same as the entrance examinations to our own universities. Any general hospital with adequate clinical facilities can conduct a medical college, but the degree and license to practice is given only by a board of examiners appointed by the Imperial government. There are nine medical colleges in Japan.

Main street of the Yoshiwara (Naka-no-cho).

Tokio is the home of the world-famed bacteriologist, Prof. Kitasato, doubtless the greatest living exponent of this important handmaid of medicine; his great work with the bubonic plague and tetanus are well known. He is now earnestly engaged with the leprosy problem, and we have reason to anticipate that he will soon give to the world important revelations that may bring relief in this disease. He conducts a laboratory for post-graduate work, maintained by the government.

I visited with great satisfaction Tokio's model prison, the Sugama, with 1800 prisoners. No country has a prison managed upon higher humanitarian principles. The buildings are all new and of ample size, of brick and stone; the approach is by a long avenue ornamented with trees, flowers and well-kept lawns. The cells are commodious, well ventilated and lighted. There is a daily school and numerous priests of the Shinto faith to give religious instruction. The workshops are numerous and well equipped. All are required to work, and every prisoner leaves there with some trade with which he may earn a support. While in the prison he receives a share in the profits of his labor, varying from seven-tenths to one-tenth, depending upon his diligence, good behavior and the number of times he has been committed, so that he may leave with a reasonable sum of money to begin life anew. Among other articles we found in the workshops were packages of umbrella handles, that were to be shipped to the United States. The trades unions at home have closed the workshops of many of our prisons, yet they carry umbrellas the handles of which are made by convicts in Japan.

Near by this prison there is a reform school for wayward children, conducted by a Japanese gentleman and his wife, Kosuka Tomeoku, who prepared himself for this important work by a prolonged residence at the Concord Reformatory, Massachusetts, and the Elmira Reformatory, New York. These noble people, without government aid, are building up an institution for child-saving that will aid in diminishing the increasing crime in their country as similar efforts have done elsewhere.

In the same locality is the City Hospital for the Insane, the great majority of the inmates being chronic and incurable. The proper care of these is a problem for Japan as it is for us. They are as well-taken care of as its crowded condition permits. It is in this respect just like many similar ones in our own country. The institutional care of these unfortunates must be modified; the methods of a half a century ago do not suffice for to-day—Japan is not behind us. This hospital is soon to be replaced by another that I have no doubt will have ample ground, and every facility for occupation and amusement that the patients require, and it will be a comfortable home as well as a hospital.

I was much interested in Japan's method of regulating the "social evil;" it is a question always of deep interest to the physician as the guardian of the health of his clientage. It can not be questioned that so long as many men can not control their passions and some women are frail, prostitution will exist, and the wise sociologist will seek some way to minimize its worst effects.

The work of regulation began here in 1573, in the then capital, the city of Kyoto; the city of Tokio began the same

Courtesans in their "cages."

work in 1617; laws with severe penalties were enacted requiring all courtesans to be licensed and sequestered, and in 1867 the work of medical inspection began. The first place selected in Tokio for the purpose was a marsh overgrown with rushes and it was called Yoshiwara, a Japanese word signifying rush marsh, and this is the name by which all such localities are known throughout the empire. There are six such localities in the capital city to-day, but the principal is the Shiu Yoshiwara, and this we visited. It is almost four miles from the center of the city, surrounded by a moat and a high fence with two gates of entrance and well guarded by the police, and no prostitute is permitted to pass the gates without permission. In this place there are 153 brothels; nowhere in Japan did we find so many expensive buildings for residences and 394 tea houses used largely as places of assignation, with over 3000 courtesans. These women are divided into three classes, according to the price they can command for services. They are under a contract with the brothel keeper, witnessed by the police authorities, for a term of from three to five years, in consideration of a certain sum that has been paid to the parents or guardians, and a further sum for the necessary outfit of clothing and bedding; the prostitute obliges herself to pay one-half her fees for living expenses, and 15 per cent. of the remainder to reimburse the keeper for money advanced. If her income has not been sufficient to discharge her obligations by the time the contract has expired, then she must remain until she has satisfied the keeper in full, which usually means so long as she lives; the practical result seems to be that the

contract is a sale for life. The women of the second and third classes are exhibited after dark in long, narrow cages, where they sit with powdered faces and rouged lips in garments as elegant as possible, waiting to be selected by some one passing by. To the average American this is most intensely revolting; to the average Japanese not at all so. The women of the first class are not so exhibited, but photograph albums are placed at the entrance to facilitate the business.

The medical inspection is as rigid as possible. Without the microscope the record of 1899 shows over 6 per cent. of inmates were infected; those of 1898, 5.5 per cent. In 1898 the number of inspections were 134,607; number of infected cases, 7506; number of guests entertained, 1,237,885. This inspection does doubtless diminish the aggregate of venereal diseases, but no inspection can be, in my opinion, adequate that is not microscopical and does not include the men as well.

The sequestration removes from the streets of Tokio every appearance of social vice, and the man who seeks it must go a long way to find it. The rigid police inspection at the Yoshiwara requires a written description, in considerable detail, of every man entering, and gives excellent espionage of the criminals. One walks the streets of these Japanese cities at night with a sense of security rarely felt in the cities of other countries. This much at least must be said in favor of it, and if the present method of exhibiting the women was stopped its most objectionable feature would be removed.

One of the most pleasing things connected with our Tokio visit was witnessing the marked attention paid our fellow traveler, Prof. N. Senn. On the day of our arrival, Baron Tomatsuri, a surgeon of the navy, with the rank of Commander, was detailed by the surgeon-general of the navy to attend upon him, and faithfully did he do his duty. Morning and afternoon he was on hand to take the Doctor to some new and interesting place, and the whole party is under deep obligations to him for the facilities he afforded for a study of the medical and surgical aspects of the capital city.

A banquet was given Dr. Senn, at which Dr. J. Frank and myself were present. When Baron Tomatsuri invited Dr. Senn to attend the function, I was present; the time fixed for it interfered with our itinerary; Dr. Senn, with that modesty and consideration for the welfare of others—these are two of his striking characteristics—declined, much to Dr. Tomatsuri's discomfiture. I insisted that he must accept and the itinerary must be changed, but considerable argument was necessary to induce him to do it. Dr. Senn wanted an excuse to avoid the publicity.

There were forty physicians present, all assembled in a room in the Imperial Hotel, and on a table in the center of this room were all the books that Dr. Senn has written, except his "Surgery," which has just been published. The menu would have done credit to any Parisian chef. At the top of it, beautifully printed in colors, were entwined the flags of Japan and the United States. The appetites of all having been satisfied by the generous feeding, Baron Haschineato, the Surgeon-General of the Army, acting as toastmaster, arose and proposed the health of each of the guests who were present. On the right of Dr. Senn sat Baron Ishiguro, Surgeon-General of the Army, retired, resplendent with decorations, some of which were won by his achievements in the war between Japan and China. On the left of Dr. Senn sat Prof. Sato, the senior professor of surgery in the University of Tokio. Prof. Kitasato made the first speech. In it he eulogized Prof. Senn for the great work he had done in the advancement of surgery, and emphasized the numerous and valuable contributions he made to the literaure of the profession. Dr. Suzuki, the senior commander of the navy, then arose, talked to the sentiment that the relations between the two countries should be more intimate, spoke of the important factor of Commodore Perry's visits in the beginning of the awakening of Japan, and of the deep obligation they were under to that distinguished American, and of the pleasure it gave them to do honor to another eminent American, and expressed the hope that two countries so close together geographically might be closer together scientifically. Baron Tomatsuri spoke of his pleasant associations with Dr. Senn in Cuba and Porto Rico during the Spanish-and American conflict, whither he had gone to study the surgery of the war, the important work that Dr. Senn had done in military surgery, and of the pleasure he had in his attendance upon him in Tokio.

Dr. Senn replied to these several speeches with more than his usual eloquence, reviewed the wonderful progress of Japan in medicine and surgery, gracefully thanked them for the great honor they had done him, and hoped it might be the beginning of a more intimate medical association between the two great countries.

The function closed in time for us to take a late train to Yokohama, and we were escorted to the train by five of the distinguished physicians, led by Baron Tomatsuri.

Yours very truly, D. R. BROWER, M.D.

Pension Examiners.

MILWAUKEE, Oct. 21, 1901.

To the Editor:—The article appearing in THE JOURNAL under date of October 5, reflecting on pension examiners, is entirely unwarranted, and the department that furnished you with such data is either incompetent or malicious.

It is far more probable that all of these twenty soldiers, aged between 50 and 70 years, should have heart disease than that none of the scarred and rheumatic veterans should have an organic heart lesion. Your comments, you will observe, carries their own refutation. I make small doubt that a far greater percentage of old soldiers have some organic heart lesion than the pension records show. Members of pension boards, through their frequent consultations and large experience, become very proficient in detecting heart murmurs, while many of your "disinterested physicians," I regret to say, can not detect a fairly loud murmur. There is no professional restraint on the pension board; every "suspicious heart" is fully discussed, and you may rest assured that the final dictum of six consulting ears is more trustworthy than the separate finding of a score of your disinterested physicians.

RALPH ELMERGREEN, M.D.

Association News.

Section on Ophthalmology.

To Members of the American Medical Association who are Members of the Section on Ophthalmology:—During the past few years the growth of our Section has been so rapid and the number of valuable and interesting papers volunteered for our annual program has become so large that at the meeting in Columbus, two years ago, the executive committee offered certain resolutions concerning our work which were unanimously adopted. The recommendations of these resolutions having been employed with such satisfactory results at our last two meetings, they will continue in force at our next meeting at Saratoga Springs, and are as follows:

It is the decision of the executive committee that the number of papers to be read at the meeting to be held in 1902 be limited to 40. They are to be limited to 15 minutes each. Papers are to be accepted in the order of their reception and at the discretion of the executive committee.

Abstracts of all papers must be sent to the secretary before May 1, 1902.

Discussions are to be limited to 5 minutes each, and no person shall speak more than once in the same debate. The member selected to open the discussion on each paper will be allowed 10 minutes.

The officers of the Section earnestly request that abstracts of papers be sent in by April 1, instead of May 1, as the extra time is necessary in order to properly arrange the program.

It is anticipated that a large number of papers will be offered to the Section as heretofore, all of which would be gratefully received if the time at our disposal permitted of their presentation and discussion. But as the number has to be limited the officers of the Section would respectfully request those desiring to submit papers to send in their subjects at once. The exact titles and papers can be worked out later.

The officers of the Section, while not desiring to control the choice of subjects, would respectfully suggest that through letters received from members, the following general topics have been proposed for discussion: 1. Intraocular foreign bodies. 2. Indication for removal of the globe. 3. Diseases and injuries to the anterior segment of the globe. 4. Refraction and muscular troubles. 5. Punctate keratitis. 6. Vernal conjunctivitis. 7. Ocular anesthetics. 8. The connection between hepatic functions and the eye. 9. The microscopic subdivisions of conjunctival inflammations. 10. The theories of color perception, normal and subnormal, from a 20th century standpoint. 11. The newest and most rational methods of asepsis in surgical procedures, in and about the eye. 12. The passing of the so-called amblyopias and amauroses. 13. The true position of electricity in ocular therapeutics. 14. The best methods of teaching ophthalmology, with exhibition of instruments, appliances, etc.

If any of the subjects thus indicated in a general way please those desiring to write, be kind enough to so designate. If not, others may be chosen. These subjects are not intended to be exact; they are merely indicative. The Section officers hope to hear from the members as soon as possible.

It is earnestly requested that only those members intending to be personally present at the Saratoga meeting will apply for place upon the program. The officers of the Section desire especially to emphasize this point, as its observance or nonobservance will have much to do with making the meeting of a satisfactory or unsatisfactory character.

Respectfully submitted, FRANK ALLPORT, Chairman, 92 State St., Chicago; C. A. VEASEY, Secretary, 116 S. 19th St., Philadelphia.

Married.

JOSE L. HIRSH, M.D., to Miss Amelia Moss, both of Baltimore, October 6.

STANLEY C. BABCOCK, M.D., to Miss Ida H. Herger, both of Buffalo, October 22.

JOHN T. MANIERRE, M.D., to Miss Mary Susan Foster, both of Chicago, October 15.

GEORGE W. WYLIE, M.D., to Miss Alma Belmore, both of Granite, O. T., October 16.

JOHN A. WESSINGER, M.D., to Miss Alice B. Walker, both of Ann Arbor, Mich., October 14.

FRANCIS CARTER WOOD, M.D., to Miss Edith Warren Sterling, both of New York, October 15.

WILLIAM E. BEASON, M.D., to Miss Lily Philips, both of Chattanooga, Tenn., October 30.

CLAUDE B. PARKER, M.D., Gallipolis, Ohio, to Miss Grace Gist, Athens, Ohio, October 16.

GILBERT E. SEAMAN, M.D., to Miss Elizabeth Sivyer, both of Milwaukee, Wis., October 29.

D. J. JENKINS, M.D., Broadway, Ohio, to Miss Ethel Colver, Summerville, Ohio, at Ohio City.

JOHN A. KILBOURN LAPP, M.D., to Miss Dorathy Sara Nice, both of Clarence, N. Y., October 23.

WILLIAM BATTLE MALONE, M.D., Memphis, Tenn., to Miss Jeane Hyde, Nashville, October 17.

CLAUDE BRADBURY PARKER, M.D., Athens, Ohio, to Miss Grace Gist, Gallipolis, Ohio, October 16.

SAMUEL W. SCHENCK, M.D., to Miss Lena Collins, both of Solomon, Kas., October 16, at Lyons, Kas.

ARMFIELD F. VAN BIBBER, M.D., Belair, Md., to Miss Rebecca Michael, at Perryman, October 16.

CHARLES A. HALL, M.D., to Miss Ethel Maud Curry, both of Cleveland, Ohio, October 9, at Richmond, Va.

HENRY MILLER BENNETT, M.D., Cheyenne, Wyo., to Miss Emily Wadhill, at Pikesville, Md., October 8.

CHARLES EDWARD HOOD, M.D., Cavalier, N. Dak., to Miss Barbara Vivian Anderson, Leyden, October 15.

JOHN F. BOYD, M.D., Paducah, Ky., to Miss Flora Steyer, Golconda, Ill., October 30, at the home of the bride.

HARRY CHENEY DYER, M.D., Gulch, Colo., to Miss Florence Whedon, Cincinnati, October 9, at the home of the bride.

EUGÈNE METCALF, M.D., Fennimore, Wis., to Miss Grace Lura Kightlinger, Yates City, Ill., October 9, at Chicago.

FRANK ALLHANDS, M.D., Wingate, Ind., to Miss Georgia Godwin, Sellersburg, October 8, at the home of the bride.

ALBERT M. COLE, M.D., Indianapolis, Ind., to Miss Ruth Schuyler, Pana, Ill., October 23, at the home of the bride.

ALBERT H. TAYLOR, M.D., to Elizabeth E. Grotefend, M.D., both of San Francisco, Cal., October 1, in London, England.

GEORGE H. GILMORE, M.D., Stanberry, Mo., to Miss Bessie Walker, Murray, Neb., October 13, at the home of the bride.

JOHN W. ADAMS, M.D., Walkerville, Ill., to Miss Stella Wood, Carrollton, Ill., October 10, at the home of the bride.

GAILY BARR DUNKLE, M.D., Washington, Pa., to Miss Lillie McCoy, Salt Lake, Utah, October 15, at the home of the bride.

CHARLES HERMAN CLARK, M.D., Washington, D. C., to Miss Cora Taggart, Massillon, Ohio, October 17, at the home of the bride.

CHARLES WINTHROP WILLIAMS, M.D., Minneapolis, Minn., to Miss Minnie Lyon Benham, Woodmont-on-the-Sound, Conn., October 16, at the home of the bride.

Deaths and Obituaries.

Gustavus G. Roy, M.D., Jefferson Medical College, 1857, died at his home in Atlanta, Ga., October 18, after a short illness, aged 65. He was born in Virginia, and practiced his profession in that state until 1875, when he made Atlanta his home. In the early part of the Civil war he was a captain and then a major in the line, but resigned the latter commission to become an assistant surgeon; he was acting post surgeon in charge of the hospitals at Atlanta when that city was destroyed by Sherman. He was a prominent man in his section, having served as a member of the city council for years, and having assisted in the organization of the Southern Medical College.

Benjamin H. Bradshaw, M.D., Rush Medical College, Chicago, 1861, died at his home in Salem, Oregon, following an operation for tumor growth, October 14, aged 67. He was born in Belmont County, Ohio, and served as assistant surgeon and then surgeon of the 46th Illinois Infantry, during the Civil war, being mustered out of service in 1866. He practiced at Orangeville, Ill., for a number of years and then removed to Oregon.

Charles E. Stoner, M.D., College of Physicians and Surgeons, Keokuk, 1882, died at his home in Des Moines, October 25, from typhoid fever, aged 43. He was professor of principles of surgery in the Iowa College of Physicians and Surgeons, and a member of the American Medical Association.

Charles H. Voorhees, M.D., Jefferson Medical College, Philadelphia, 1850, died at the Presbyterian Hospital, Philadelphia, October 19, as the result of an apoplectic stroke. For the past few years he has not practiced, but he was once a prominent physician of Flushing, Ohio.

Joseph Sanders, M.D., Bellevue Hospital Medical College, New York, 1892, died at Oil City, Pa., while on a visit, October 20, from typhoid fever, aged 34. After studying in Germany, he had practiced in New York since 1895, devoting himself to work on the eye, ear and throat.

Derrell B. Darby, M.D., South Carolina Medical College, Charleston, 1873, died at his home in Walhalla, S. C., after a brief illness, October 8, aged 54. He had served several terms as mayor of Walhalla and was president of the city board of health at the time of his death.

George B. Bunn, M.D., Starling Medical College, Columbus, 1883, was found dead in his office, at Mount Vernon, Ohio, October 22; death was due to heart exhaustion. During the

Spanish-American war he served as brigade surgeon with the Seventh Army Corps in Cuba.

William J. Kearney, M.D., McGill University, Montreal, 1875, died at his home in Mariposa, Cal., October 10, from pneumonia, aged 45. He was born in Canada, and for a number of years practiced in Montreal, but in 1885 he removed to California.

Leonard Latter, M.D., Detroit Medical College, 1875, died at his home in Monument Beach, Mass., October 21, aged 50. He practiced many years in Falmouth, and was well known among the summer residents along the Buzzard's Bay shore.

John R. Moore, M.D., Jefferson Medical College, Philadelphia, 1854, died at his home in Parnassus, Pa., October 12, aged 76. He was a well-known practitioner in Western Pennsylvania, until his retirement six years ago.

Albert Binder, M.D., Medical College of Ohio, Cincinnati, 1886, died at his home in Ottoville, Ohio, from pulmonary tuberculosis, October 22, aged 38. He was a member of the American Medical Association.

Lorenzo Firmen, M.D., said to have been the oldest physician in Ohio, died suddenly at his home, in Findlay, October 13, aged 94. He was a native of Massachusetts.

Jefferson M. Mason, M.D., Medical Department Arkansas University, Little Rock, 1888, died at his home in Floresville, Texas, October 12, from diabetes.

William M. Gray, M.D., New York University, 1846, died at his home in Allegheny, Pa., October 10. He formerly practiced in Menard County, Illinois.

Webster D. Gear, M.D., Beaumont Hospital Medical College, St. Louis, 1893, died at his home in Argentine, Kan., from heart failure, October 19.

George G. Rahauser, M.D., Jefferson Medical College, Philadelphia, 1866, died at his home in Pittsburg, Pa., after a short illness, aged 58.

Louis D. LaBonte, M.D., College of Physicians and Surgeons, Baltimore, 1894, died at his home in Derby, Conn., October 21, aged 31.

William Geddes, M.D., Howard University, Washington, 1884, died at his home in Washington, October 21, from paralysis, aged 50.

Guy Dean, M.D., acting assistant-surgeon, U. S. A., died in the hospital at Santa Mesa, P. I., from pulmonary tuberculosis, September 15.

Charles Edward Dority, M.D., College of Physicians and Surgeons, New York, 1884, died at his home in Brooklyn, N. Y., October 23.

H. H. Crooker, M.D., Louisville Medical College, 1895, died suddenly at his home in South China, Maine, October 15, aged 36.

Charles F. W. Haase, M.D., New York University, 1857, died at his home in New York City, after a long illness, October 15.

Samuel Butcher, M.D., Jefferson Medical College, Philadelphia, 1864, died at his home in Mauricetown, N. J., October 18.

Harmon J. Dean, M.D., Miami Medical College, 1857, died at his home in Brocton, N. Y., October 11, after a brief illness.

Miscellany.

San Francisco Plague Report.

CASE 42.—Alex. W., which was the case reported in the last communication, the man who applied for treatment at the Marine-Hospital, September 13. This man has since recovered. A pure culture of plague bacillus was obtained from fluid aspirated from the bubo.

CASE 43.—Tom Chin Fat, died September 14, at 125 Waverly Place. Body of a well-developed, fairly well-nourished Chinese male. Cervical, axillary, popliteal, epitrochlear and right femoral glands barely palpable. No existing signs of previous venereal disease. Conjunctiva hemorrhagic. In left inguino-femoral region there was a large firm mass, largest in the femoral region. Section of this swelling showed numerous hemorrhages and gelatinous edema. The lymph glands of the bubo were markedly hemorrhagic and the hemorrhage of the surrounding tissues extended into the abdominal cavity, involving the whole of the antero-lateral abdominal wall. The left iliac glands were much enlarged and hemorrhagic, as were also the mesenteric glands, which were the size of peas. Heart, muscle soft, otherwise normal. Liver, cloudy swelling, and a few areas of coagulation necrosis. Lungs, tubercular. Stomach, submucous hemorrhages. Spleen, enlarged, a few small, whitish specks subcapsular. Pulp soft, trabeculæ obliterated. Smears showed numerous pest bacilli.

CASE 44.—Mrs. Saggau, residence 628 Broadway. Died September 27. This woman was a native of Bavaria, and 52 years old. She was taken sick very suddenly on the 24th. She had been doing a washing that day and was perfectly well, laughing and talking immediately before the attack. She started into the house, but fell suddenly on the floor and was seized with a chill and vomiting. The next day she was taken to the German Hospital, where she soon became comatose and died on the 27th. Autopsy showed body of a well-developed, well-nourished, rather fat Caucasian female of middle age. Lungs: Pleural adhesions on both sides; left lung congested and slightly edematous. Right, slightly congested. Heart was flabby, walls rather thin, some roughening of the mitral valve segments, otherwise normal. About 20 c.c. clear fluid in pericardium. Spleen was enlarged, soft, pulp very dark and swollen, trabeculæ obliterated; smears did not show any organisms. Liver was normal in size, capsule smooth and glistening; cut surface showed cloudy swelling. Kidneys showed capsule adherent, granular. Mesenteric glands slightly enlarged, dark and hemorrhagic. Lymph glands of right femoral region very much enlarged, forming a well-marked bubo. Incision disclosed hemorrhage and edema of the surrounding tissues, and the glands themselves were enormously enlarged, hemorrhagic and necrotic. Within the abdominal cavity, the iliac glands were also enormously enlarged, forming a continuous chain with those of the inguinal and femoral regions. There was also an area of hemorrhage of the retro-peritoneal connective tissue behind the bifurcation of the abdominal aorta. Smears from the gland substance showed numerous typical plague bacilli.

CASE 45.—Lee Ming-Lee, Chinese male, aged 49, cigarmaker, died September 27, at 12 Spofford Alley. Bubo found in right femoral region. The report from the autopsy is pending.

CASE 46.—Jew Hoeg Kuey, male, aged 40 years, died September 29, at 109 Waverly Place. Autopsy showed body of a well-developed, well-nourished, Chinese male, of middle age. Conjunctivæ injected. No enlargement of the superficial lymphatic glands, but the right submaxillary gland was enlarged. Buccal mucosa negative. No evidence of venereal disease. Small venereal wart on penis, but no ulceration. Heart: There was a thickening of the base of the chordæ tendinæ of the mitral and tricuspid valves; otherwise normal. Both lungs show apex adhesions and slight tubercular infection, but no consolidation or abscesses. Spleen was 14x8x3½ cm., pulp soft, rich in blood. Malphigian bodies and trabeculæ indistinct. Liver, 24x10x6 cm.; surface hobnailed. Kidneys showed chronic nephritis. Suprarenals not enlarged. There is an acute gastro-entero-colitis. No ulceration of Peyer's patches. Tonsils hemorrhagic, submaxillary and retro-pharyngeal glands enlarged. Esophageal mucosa injected. Intima of thoracic aorta markedly hyperemic. Arteries show chronic endarteritis. Smears from submaxillary gland, tonsils and spleen showed numerous streptococci and bi-polar staining bacilli. Diagnosis confirmed by inoculation.

CASE 47.—Wo Tai, male, Chinese, aged 50 years. Died October 10, at 103 Waverly Place. Was foreman of a gang at the Pacific Mail Dock. Autopsy showed body of a well-developed and well-nourished Chinese male. Rigor mortis well marked. No palpable gland except in the left inguino-femoral region, where they were enlarged into a distinct bubo. The skin over the swelling presented a bleb about 1 cm. in diameter, the

contents of which showed numerous bi-polar bacilli in smear. There were dark scars over the shins; no evidence of venereal disease. Incision of the bubo showed the glands to be enlarged, hemorrhagic and necrotic with a distinct gelatinous peri-glandular edema. The glands were largest in the femoral region. Heart valves normal. Muscle showed fibroid changes. Right auricle larger than normal and contained a clot. Lungs: Left contained a small calcareous tubercle in the upper lobe; otherwise normal. Right, normal, a few adhesions to outer wall. Spleen was enlarged, 16x3x4 cm.; showed acute splenitis. Mesenteric glands not enlarged. Kidneys injected. Liver and gall-bladder negative. Hemorrhagic glands in left iliac and lumbar regions. Smears from glands of bubo and blood showed numerous pest bacilli, but none in the spleen. Animal inoculation positive, the guinea-pigs dying five days after inoculation.

Compensation by the Valves in Aortic Insufficiency.—Drasche noted marked improvement of all the symptoms of aortic insufficiency in three patients who died within two or three years of an intercurrent disease. The autopsies of each showed that the insufficiency had become practically compensated by changes in the valve-flaps, which had altered in such a way as to remedy the defect and arrest the regurgitation more or less perfectly. He urges others to study these changes more closely in future so that their clinical manifestations may be recognized. In a general way, he remarks, every case of actual aortic insufficiency, with palpitations, edema and dyspnea at times, in which these symptoms gradually subside while the general health improves and the signs on the part of the heart grow less distinct, can be recognized as a case of compensation obtained by some retrogressive process in the semi-lunar valve-flaps, rather than due to compensation by the mediation of the left ventricle. This compensation, by a retrogressive process on the part of the valve-flaps, is most probable when the sclerosis, induration or shriveling is but partial. The details of his findings are published in the *Wien. Med. Woch.* of June 1 and 8.

Congress of Criminal Anthropology.—The following resolutions were adopted at the International Congress of Criminal Anthropology which has just concluded its sessions at Amsterdam: 1. That every child who has committed a crime should be examined by a competent physician, before being summoned into court, and those discovered to be actual degenerates should be placed in pedagogic establishments organized for the purpose to train and improve them intellectually and morally. 2. That the biological record of the criminal should be appended to the court record in every criminal case. 3. That governments should take effective steps to arrest the progress of alcoholism, such as the strict surveillance of saloons, if necessary, closing some of them, and government monopoly of the production and sale of alcohol in general. The Italian school urged that a crime should not be considered from the standpoint of personal culpability, but from that of the danger to society represented by the criminal. The physician should stand by the side of the magistrate, and the latter should be a criminologist and not a mere commentator of the text. The *Progrès Médicale* announces that the next congress will be held at Turin in 1906.

Position Treatment of Hemorrhoids.—G. Oeder recommends in the *Ztft. f. Phys. Therapie*, iv, 8, to raise the pelvis as an aid in treating hemorrhoids. A wedge-shaped cushion is placed under the lower portion of the trunk, raising it considerably above the level of the chest, thus allowing the blood in the congested nodules to escape by its own gravity. One night is usually enough. Severe cases may require the application of the cushion day and night.

Binary Syphilis.—This is a new term introduced by Tarnowsky to designate the syphilis acquired by the descendants of syphilitics after they have lost the immunity to the disease with which they were born. Binary syphilis is especially deleterious for the offspring, abortions and still-births being exceptionally frequent. He attributes the dying-out of certain tribes to endemic syphilis supplemented by this binary form.

Lime in the Treatment of Cutaneous Tuberculosis.—Christides has used a saturated solution of quicklime for eight years in the treatment of cutaneous tuberculous processes, and asserts that it transforms the focus into a simple, rapidly-healing inflammation. It destroys the morbid tissues and microbes, while it does not affect the adjacent sound skin. It can be applied in the form of a salve.—*Grèce Médicale*, June.

Societies.

COMING MEETINGS.

Medical Society of Virginia, Lynchburg, Nov. 5-7, 1901.
Oklahoma Territory Medical Association, Oklahoma City, Nov. 13, 1901.
Southern Surgical and Gynecological Association, Richmond, Va., Nov. 12-14, 1901.
Tri-State Medical Association of Mississippi, Arkansas and Tennessee, Memphis, Tenn., Nov. 19-21, 1901.
Western Surgical and Gynecological Association, Chicago, Dec. 18-19, 1901.

Lenawee County (Mich.) Medical Society.—This Society was organized at Adrian, October 22, and the following officers were elected: President, Dr. Daniel Todd, Adrian; vice-president, Dr. George Howell, Tecumseh, and secretary-treasurer, Dr. David L. Treat, Adrian.

Clinical Society of Washington, D. C.—At a meeting of this Society, October 14, the following officers were elected for the year: Dr. Walter A. Wells, president; Dr. Monte Griffith, vice-president, and Dr. J. Carlisle De Vries, secretary-treasurer.

University of Chicago Medical Society.—The organization of this Society, to be composed of members of the University faculties, was perfected, October 22, by the election of Dr. Henry H. Donaldson, as president, and Dr. Preston Kyes, secretary.

El Paso County (Texas) Medical Society.—The third annual meeting of this Society was held October 12, and the following officers were elected: Dr. Stephen T. Turner, president; Dr. Walter N. Vilas, vice-president; Dr. Junius S. Rawlings, secretary, and Dr. Herbert E. Stevenson, treasurer, all of El Paso.

Southern Kentucky Medical Association.—At the meeting of this Association, held at Bowling Green, October 25, the following officers were elected: President, Dr. W. N. Hall, Woodburn; vice-presidents, Drs. James C. Douglass, Franklin, and M. L. Garvin, Horse Cave, and secretary, Dr. Lee P. Trabue, Elkton.

Chicago Gynecological Society.—The twenty-third annual meeting of this Society was held October 19, and the following officers were elected: President, Dr. L. E. Frankenthal; vice-presidents, Drs. A. H. Ferguson and J. C. Hoag; treasurer, Dr. Emil Ries; editor, Dr. C. S. Bacon; pathologist, Dr. M. L. Harris, and secretary, Dr. W. H. Rumpf.

Iowa State Association of Railway Surgeons.—At the eighth annual meeting of this Association, held at Des Moines, October 17, the following officers were chosen for the coming year: President, Dr. Arthur L. Wright, Carroll; vice-president, Dr. Benton H. Criley, Dallas Center; secretary, Dr. Ira K. Gardner, New Hampton, and treasurer, Dr. Gilbert Baldwin, Ruthven.

New York State Medical Association.—The eighteenth annual meeting of this Association was held in New York City, October 21-24, and the following officers were elected: President, Dr. Alvin A. Hubbell, Buffalo; vice-president, Dr. William H. Biggam; secretary, Dr. Guy D. Lombard, New York City, and treasurer, Dr. Edward H. Squibb, Brooklyn. The delegates to the American Medical Association are: Drs. E. Eliot Harris, New York City, two years; E. D. Ferguson, Troy one year; Charles A. Wall, Buffalo, two years; Charles E. Quimby, New York City, one year, and Hubert H. Arrowsmith, Brooklyn, one year. The alternates are: Drs. De Lancey Rochester, Buffalo; Z. J. Lusk, Warsaw; Irving S. Haynes, New York City; L. G. Baldwin, Brooklyn, and Charles S. Payne, Liberty. An account of the meeting will appear in a later issue of THE JOURNAL.

Idaho State Medical Society.—This Society was entirely reorganized and a new constitution and by-laws adopted along the lines recommended by the American Medical Association. The officers elected were: President, Dr. H. A. Castle, Pocatello; vice-president, Dr. John W. Givens, Blackfoot; secretary-treasurer, Dr. Ed. E. Maxey, Caldwell (for two years); dele-

gate to A. M. A., Dr. Ed. E. Maxey, Caldwell (for two years); alternate, Dr. John W. Givens, Blackfoot; chairman committee on arrangements, Dr. F. J. Ledbrook, Moscow; chairman committee on legislation, Dr. O. B. Steely, Pocatello; chairman committee on nominations, Dr. R. L. Nourse, Hailey; chairman committee on publication, Dr. Ed. E. Maxey, Caldwell. Dr. L. P. McCalla, Boisé, was appointed to represent the Idaho State Medical Society on the Legislative Committee of the American Medical Association. Moscow, Idaho, was selected as the place for the next annual meeting, October 9 and 10, 1902.

Medical and Chirurgical Faculty of the State of Maryland.—A movement looking to the consolidation of the local societies with the Medical and Chirurgical Faculty of the state, as sections of the latter, was inaugurated last April, and suitable amendments proposed to the constitution of the Faculty to carry the matter into effect. These amendments lie over until the next meeting of the faculty. It was proposed to form five sections, viz., 1, clinical medicine and pathology; 2, surgery; 3, obstetrics and gynecology; 4, neurology and psychiatry, and 5, ophthalmology and otology, "and as many more as may at any time be proposed in writing by ten members of the Faculty and approved by a vote of three-fourths of the members present at a stated meeting." The clinical society took action on the above last Friday, and it was then determined to abandon independent organization; those members who are not members of the Faculty were advised to become so, and those who are members were urged to participate in the formation of the proposed sections, particularly in clinical medicine and surgery. It was ordered that all the property of this Society be disposed of, the debts paid and the net proceeds donated to the Faculty. Sixty members attended the meeting, and of 27 not members of the Faculty twenty-five signified their intention of becoming so. About $300 will be turned in to the Faculty, which will probably be put into the permanent endowment fund.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, Oct. 1, 1901.

Dr. Joseph Collins, president.

Spinal Fracture, with Special Reference to Operative Interference.

DR. GEORGE L. WALTON, Boston, presented a paper on this subject, dwelling particularly on the question of whether it was not desirable to make early operation in this class of cases the common custom. He said that there were no symptoms which would lead one to assert that the cord was or was not unquestionably crushed. In the cases of so-called complete injury one finds immediate relaxed motor paralysis and entire absence of rigidity or other irritative sign in the motor sphere. Partial injury to the cord might be indicated by slower onset of paralysis, its unilateral or irregular distribution, the partial retention of the reflexes and subsequent improvement. In fracture with total transverse lesion the area of anesthesia was generally sharply marked, and the level was materially below the seat of the lesion. The classical symptoms of complete transverse lesion certainly do not indicate conditions beyond repair. Incomplete anesthesia points to incomplete lesion of the cord; the same is generally true of anesthesia of limited or unilateral distribution. Injury to the nerve roots alone sometimes appears in the cervical region after stretching and bruising, perhaps with temporary displacement of vertebræ. The diagnosis of local concussion of the spine was still applied by certain authors to such cases. Retention of urine was the rule in all varieties of spinal fracture with injury to the cord whether the lesion involved the cervical, dorsal or lumbar cord. This probably showed that mechanical conditions prevent the escape of urine so long as the propulsive force is lacking. The symptoms referable to vasomotor disturbances are evasive and baffling. The usual rise of surface temperature might perhaps be explained by the dilatation of superficial blood vessels due to cutting off the vaso-constrictor influence from the medulla. Absence of sweating tends to fortify the theory that the principal sweat center lies in the medulla, the fibers being interrupted in their course by the lesion. Sweat secretion appears to be due to specific nerve influence conducted by specific nerve fibers and not to heat. It is now generally recognized that the knee jerk is lost in cases of complete destruction of the cord, and cases of spinal fracture constitute no exception to this rule. The superficial reflexes were generally lost or diminished in these cases, and were probably always lost in the complete lesions. The Babinski reflex was a common later phenomenon, but he would doubt its occurrence in cases of total destruction of the cord without reparative process. The local signs, such as the formation of a knuckle, were very variable, and not of much significance. Operation often shows that the apparent irregularity is of no importance. It should be remembered that a great variety of curves are found in the back in healthy persons free from injury. This statement was fortified by the exhibition of a series of tracings from the backs of healthy students in the Boston Normal School of Gymnastics. The Roentgen rays might prove of value in making diagnosis, but in his own experience this method had not yielded sufficiently satisfactory results. The prognosis in cervical cases without operation was generally grave, death usually occurring within a few days. In cases of fracture of the dorsal or lumbar region without operation the prognosis was better, but still very grave. The fatality in non-operative cases was about 80 per cent. The statistics at hand were not very reliable regarding operative cases because many unsuccessful cases were not reported. The cases operated upon at the Massachusetts General Hospital since 1870 yielded a mortality of about 64 per cent. In some quarters laminectomy was not advocated, or was even denounced. Apprehension regarding the danger of the operation had been entirely allayed, and many cases had been reported showing that laminectomy is not dangerous by reason of the weakening of the spinal column. It was doubtless true that in most cases the crush of the cord had taken place. The author was inclined to think that owing to the decided limitations of our diagnostic ability it was well to promptly resort to operation in all cases, except the moribund and those with great displacement, and give the patient the benefit of the doubt. According to his personal experience the course of the operative cases coming under his observation had been more favorable than he should have expected without operation, from his previous experience and his knowledge of the literature. The neurologist was often asked whether it was wise to open the dura at the operation, and his answer should be in the affirmative. An edematous condition of the arachnoid was apt to exist and would be relieved by such a procedure, but the chief reason was the opportunity this afforded for inspecting the cord. Of late the custom had been not to suture the dura but to leave it open. It had been the usual custom in the past to secure drainage for a day of two, but various recent operators had demonstrated that it was not at all necessary, and by eliminating drainage one could secure quicker healing and greater immunity from sepsis. In cases of grave shock it would seem to be reasonable to delay operation if only to better interpret the symptoms. Rapidity of operation was important, and the surgeon need not fear injuring the cord by the use of forceps.

DR. CHARLES L. DANA said that his own experience had led him to believe that the operation is practically safe, and that the spinal column itself is not injured by the operation. He had not had any fatal results in his operative cases, about half a dozen in all, and two of them were cases of injury in the cervical region. It was a matter of astonishment to him that such long and severe operations could be done upon these patients without sacrifice of life. He must confess, however, that the ultimate results of these operations had not been satisfactory, according to his observation. He had seen some improvement in motion and in the bladder symptoms in these cases, but that had been about all, and it was quite possible that such improvement would have occurred without operation. If by clinical observation one could be sure that the cord was crushed one should not recommend operation. This could often be done. If there was a line of anesthesia coinciding with the line of paralysis, and this co-existed with the absence of knee jerks, he would feel almost positive that the spinal cord had been cut across, although there were certain exceptional cases affecting the cervical region which did not seem to follow this rule. It seemed to him that the opera-

tion performed by Lloyd, and which the speaker had seen employed by Abbé, was the quickest, safest and most effective. The author had done a service in bringing up this subject and urging a more persistent effort to relieve this distressing class of cases. The general opinion among surgeons was that this was a class of cases which hold out but little hope of benefit from operation.

Dr. Edward D. Fisher said that he had had a number of cases of fracture of the spine under his observation, and in the main he would agree with the reader of the paper that an operation is advisable. He would do this because death rarely occurs as the direct result of the operation. Where there had been a fatal termination he felt that the same result would have occurred if there had been no operation. In two cases that had been under his observation in which cocain had been used, the operation had been done as well as under general anesthesia. In one of the cases the injury had followed a dive in shallow water, and in the other from an acrobat diving off the shoulders of another acrobat. The lesions had been about the same in each case, and because of the situation of the lesion they had been afraid to administer a general anesthetic. When the cord was touched there was a sensation of pain, but no localization, and the operation was conducted without any more shock than with general anesthesia. He agreed with the reader of the paper that it was almost impossible to make an accurate diagnosis between cases in which the cord had been partially or completely crushed. He did not believe that a lesion through the cervical region, with an absolute loss of reflexes, positively indicated that there had been a complete destruction of that region. Sometimes on cutting down and exposing the cord one observed very little change in the appearance of the cord until the dura had been cut. Even then there might be very little change because of a hemorrhage in the substance of the cord. The distribution of the sensation in almost all of these cases was irregular, so that the classical picture was rarely observed. In many cases where there had been absolute loss of reflexes there had been partial recovery; indeed, in his experience it had been the rule to see only partial recovery.

Dr. Graeme M. Hammond did not think it was always possible for the neurologist to say that the symptoms presented were positively indicative of complete destruction of the cord. In one case coming under his observation, in which a young man had fractured his fourth cervical vertebra by diving in shallow water, there had been evidence of complete injury to the cord. He had been operated upon a year or two afterward, but it was needless to say there had been no resultant improvement. In another case in which there had been an incomplete injury to the cord, and in which operation had been resorted to shortly afterward, there had been complete recovery and the man had returned to his occupation of wrestler. Within a few days he had seen a very interesting case. It had been first reported four years ago. Several bales had struck him on the back, and almost immediately he had presented the symptoms of tabes, pure and simple. He had had no reflexes and almost complete anesthesia with the Romberg symptom. He had been operated upon twelve weeks after the injury, and had made a complete recovery with a return of reflexes. He had seen this man within a few days, now twelve years after the injury, and he had then presented absolutely no symptom of injury to the cord. Such cases naturally lead one to be rather optimistic in regard to the mild cases. The fact that there was spinal deformity meant nothing, for in Pott's disease of the spine there was often very marked deformity without any spinal cord symptoms. If the symptoms presented in a given case pointed to the total transverse lesion of the cord there was nothing to be done but operate, and even this gave a forlorn prognosis. In the milder cases the operation should be undertaken as soon as possible, as here the prognosis was much better. He would operate in any cases, no matter how hopeless it seemed, because nothing else could be done, and the patient was no worse off than before. In the milder cases it was our duty to operate.

Dr. B. Sachs said that the question arising regarding operative interference in these cases was similar to the question of surgical interference in Pott's disease or in cases of tumor. The answer to this question must depend very largely upon the stage. He coulld not agree with Dr. Hammond that operation should be done because to say the least, the person would be no worse. It was still the fashion to delay surgical interference until everything else had been tried, whereas if surgical interference was to do any good it should be practiced at once. In cases of fracture of the spine, therefore, whether complete or incomplete, operative interference at the earliest stage could do no harm and might be productive of a great deal of good. The differential diagnosis between complete and incomplete crush was difficult. When the crush was complete the reflexes were almost invariably absent, whereas if there was more or less maintenance of conduction through the cord the reflexes were apt to be impaired or exaggerated according to the site of the lesion. The dissociation of sensation was, in his opinion, an exceedingly valuable symptom, as it pointed out the rather moderate involvement of the cord. He was inclined to think that it was often a root symptom and not an indication of absolute involvement of the cord itself.

Dr. J. Arthur Booth said that his experience had been limited, but he had not seen any great benefit from operation, although it should be said that operative interference had been resorted to at a late stage. It seemed rational to treat fractures of the vertebræ on the same general surgical principles as fractures in other parts of the body. In two of his cases the complete paraplegia existing prior to operation had remained unaffected, though there had been some diminution of anesthesia and improvement in the condition of the bladder.

Dr. Joseph Fraenkel referred to a case at the Montefiore Hospital of fracture of the spine. The patient had been admitted a year and a half after the accident, and had been walking around since the injury. Although the operation had been done late, it was worthy of note that three years and a half after the injury the autopsy showed that the cord had not been entirely destroyed. About six years ago he had presented to this society a paper on the differential diagnosis between complete and partial destruction of the cord. In four cases in which the reflexes had been lost the autopsy had shown complete destruction in only one of the cases. That shock alone was sufficient to destroy the reflexes was an old physiological dogma. He wished to insist that it was important to note the condition of the deep and superficial reflexes because for the maintenance of the deep reflexes it was necessary that the cord be intact, whereas this was not requisite for the superficial reflexes. The plantar reflex was the one that was not destroyed.

Dr. George E. Brewer said that there was a greater inclination in Boston than in New York for operating upon these cases. He had personally passed through various stages of opinion regarding operating on these cases. At first he had been influenced by those around him in Boston. The general rule had been when there was paralysis below the point of injury and involvement of the sphincters, to do an exploratory operation. He could not recall a single one of these cases that had been benefited by the operation, though he felt that they had all been examples of complete crush of the cord. In New York City the surgeons had been perhaps a little too conservative. Injury in these cases is either a crushing one or there is a hemorrhage within or without the cord; hence the outlook from operation was not good. The cases of hematomyelia recover without operation; cases of severe crushing injury, even with operation, do not. This seems to be the prevailing view here at the present time. Possibly some of the early successes were in cases of unrecognized hematomyelia, in which, of course, recovery would have taken place entirely independently of the operation. Last winter he had seen a girl with injury of the last lumbar vertebra. There was a sensory paralysis and complete loss of control of the bladder and rectum. Dr. Hammond had examined the case, and believing that there was no transverse lesion, had urged operation. The speaker had performed laminectomy, and had found only a

small spicule of the bone. The patient had recovered from the operation, and at the end of six weeks had regained control of the bladder and rectum. When seen two or three months after operation she had almost completely recovered. Had it not been for the advice of Dr. Hammond he would have looked upon this case as an improper one for operation. It had been his practice to introduce in these cases a very small rubber drain.

DR. A. C. BRUSH, Brooklyn, said that he had seen a number of these cases. In the past six months he had had several *x*-ray photographs made, and they had been so variously interpreted by those who had seen them that they had ceased to have any value. A case was mentioned in which great improvement had followed the removal of a spicule of bone in a man brought into the Kings County Hospital after a fall. A diagnosis had been made of fracture of the arch. An immediate operation had been done, and the arch found to be broken down, but this was not pressing upon the cord, but a fragment of the tenth dorsal vertebra. This case had impressed him with the value of operative interference as a means of diagnosis.

DR. WALTON, in closing, said that the statement made by Dr. Dana regarding the symptomatology of complete crush of the cord seemed to impeach the observations of a number of trustworthy observers. Regarding late operations he would say that if the pressure had been removed there was no use in operating, and if the pressure had existed for many months there was little prospect of doing any good by operating. Theoretically, the late operation would be useful in cases in which symptoms arose from the formation of callus on the inside of the laminæ, and the pressure on the cord, but his personal experience did not include any case of this kind.

WILLS' HOSPITAL OPHTHALMIC SOCIETY.

Regular Meeting, held in Philadelphia.

Dr. Conrad Berens in the Chair.

DR. P. N. K. SCHWENK presented a case of dislocated cataract in a 35-year-old man who had been struck in the eye some thirty years previously. The dislocation, which had taken place into the anterior chamber, and which was accompanied with symptoms of secondary glaucoma, had occurred but one week before the case was seen.

Dr. C. Berens asked if there had been any irritation of the fellow eye, which was replied to in the negative. He referred to a case occurring in his clinic. The patient, a 47-year-old man, had received an injury to the affected eye some thirty years previously. He had never had any trouble save that of poor vision until a few days before he appeared in the outpatient department of the hospital; severe attacks of pain at that time compelling him to seek relief. The globe was markedly swollen in comparison with the other eye and intraocular tension was greatly increased. There was ciliary tenderness of the good eye with a hyperemia in the optic nerve head and macular region. Enucleation was performed. Examination of the eye showed that the crystalline lens was dislocated downward and forward. The iritic tissues were atrophied, the ciliary body was degenerated, and there were the pathologic conditions of secondary glaucoma. The interesting point was the period during which such a dislocated lens can remain inert. His theory was that an exudate had formed between the lens and tissues of the iris by the formation of lymph, the symptoms of secondary glaucoma being produced by a blocking of the fluids of the eye.

DR. CHARLES A. OLIVER presented a case of dislocated lens into the anterior chamber with symptoms of acute secondary glaucoma. The patient was struck in his right eye with a boxing glove some eighteen years previously, the eye becoming blind in a year's time. The eye was never painful until four days ago. At the time of the examination, the pupillary area was blocked by a cataractous lens that was bulging into the anterior chamber. Vision was limited to a point of light perception in the lower temporal field. The lens was readily extracted through a section made through the lower periphery of the cornea with a wire loop, without the loss of any vitreous. The wound was thoroughly healed in forty-eight hours' time and there was never any reaction. The fellow eye was healthy.

DR. SCHWENK stated that he intended, as opportunity arose, to remove the dislocated lens in addition to doing the iridectomy in appropriate cases of glaucoma. This procedure he deemed desirable provided that there was not any probability of severe hemorrhage. He believed such a dislocated lens to be the causative factor in producing secondary glaucoma more frequently than any exudate and pointed out that it was nothing more than a hard foreign body in the anterior chamber.

DR. OLIVER stated that glaucoma complex arises from many conditions. In the traumatic lenticular type the eye is usually quiescent for a long period of time, when suddenly some slight injury occurs by which the more or less opaque lens is thrust into a false position, such as the pupillary area, by which stoppage of lymph flow between the chambers is produced. In such cases he has frequently performed and advised an immediate removal of the lens. His experience has been that totally dislocated lenses could remain in the vitreous chamber for years without the appearance of any gross symptoms of any kind except uveal disturbances, but should they happen to get into the line of flow of any of the intraocular fluids and give rise to lymph blockage, a precipitation of glaucomatous symptoms must as a rule be expected. He believed the plan of combination of a peripheral iridectomy with extraction of the lens a useful one in appropriate and carefully chosen cases, citing a successful example which had come under his care.

DR. WILLIAM THOMSON presented a case of exenteration for orbital sarcoma in a 79-year-old man. He also exhibited a photograph of the condition before operation, showing the enormous masses of sarcomatous material filling the orbit and protruding from it—soon following the removal of the eye some two years before. During the procedure, the tumor-mass was found mainly attached to the periosteum of the external, the superior, and the inferior walls of the orbit.

DR. OLIVER gave a brief account of a case of orbital growth—a sarcoma involving the frontal, ethmoid, and sphenoid sinuses, and the antrum—which he had removed in its entirety at one operation by breaking successively into these cavities from the orbital cavity. The socket granulated thoroughly into shape, and there never has been any recurrence of the growth or any metastasis.

SAN FRANCISCO SOCIETY OF EYE, EAR, NOSE, AND THROAT SURGEONS.

Regular Meeting, held September 26, 1901.

Complete Retinal Detachment.

DR. G. W. MERRITT presented a case of complete retinal detachment which came on suddenly twelve years ago, and has persisted unchanged ever since. In this case there was no etiological factor obtainable.

DR. R. PAYNE spoke of the therapeutic value of subconjunctival injections of normal salt solution in these cases, and stated that he had tried an injection of 10 to 12 minims in one case, but that the resultant pain was so great that he did not repeat the experiment.

DR. W. F. SOUTHARD described his method of giving subconjunctival injections, which consisted in directing the point of the needle well outward after introducing it under the conjunctiva, thus avoiding the pain and danger of infecting the capsule of Tenon. He also gave a brief history of a case of retinal detachment which he had observed in a business man some fifteen years ago. In this case the detachment had come on without any previous illness or trauma, and had remained stationary, both as to extent and as to vision, for fifteen years.

Toxic Amblyopia.

DR. R. PAYNE then demonstrated two cases of toxic amblyopia. The first case gave a history of going to bed perfectly well, and of awaking in the morning almost entirely blind, being able to see moving objects only. Two or three days later

even this small amount of vision left him, so that he could not distinguish light from darkness. Three weeks later, when first seen by Dr. Payne, he was again beginning to see objects. The veins of the fundus were a trifle full, the arteries somewhat narrowed, the margins of the papillæ somewhat hazy, the temporal halves of the discs taking on a glistening white appearance, the nasal halves retaining a pinkish appearance. Blindness was almost absolute in the nasal halves of the fields, the temporal halves possessing perception of moving objects. The patient has always been perfectly well, and there was no evidence of specific disease, diabetes, hemorrhage, nor of the taking of any drug which might produce the sudden amblyopia. His occupation of bookbinder did not expose him to any toxic influence, nor did it demand very keen vision. The patient had taken a moderate amount of alcohol for years, five or six drinks of whisky a day, and had chewed two or three small plugs of medium strong tobacco a week. This was not excessive, yet it was the only cause to be found for the amblyopia. It is probable that his field was narrowed gradually, or that he had developed scotomata previous to this attack and that the suddenness of the attack was apparent only.

The second case was one of blindness from drinking wood-alcohol. A large quantity, said to be a pint, was drunk with suicidal intent. The patient was unconscious for four days, and on recovering was absolutely blind, with widely dilated pupils. When seen ten days later he had absolutely no perception of light, his pupils were widely dilated, right papilla a trifle hazy and uniformly milky white, both veins and arteries a trifle narrowed; no other changes in the fundus. The left papilla exhibited practically the same changes, only not quite so far advanced. The patient has now been under treatment for three or four weeks; the papillæ are becoming whiter, and there is absolutely no light perception in either eye.

Dr. Southard held it unnecessary to assume any toxic agent in the first case, and reported a case in which the central vision remained good while the concentric narrowing of the fields progressed until total blindness ensued. In this case no tobacco nor alcohol had been used, and the patient was a picture of health. At no time was there any swelling of the nerve-head, and the reflexes were always normal.

Dr. Eaton was of the opinion that the changes in the fundus in the first case were possibly due to a distension of Schwalbe's (subarachnoid) space, giving rise to edema of the nerve and retina, and consequent atrophy from compression. This conjecture seemed borne out by the blur in the left eye, and the appearance of edema in the macular region. A number of men who had inhaled Columbia spirits, had complained of temporary obscuration of vision. In these cases the loss of vision is intermittent.

Dr. Merritt stated that the whiteness of the discs in the first case was much more pronounced than when he saw the case two weeks ago.

Dr. Payne stated that the reflexes in both cases were normal.

Dr. Eaton recalled the case which he presented to the Society on February 21 of this year, in which a crystal of methylene-blue and a 20 per cent. solution of protargol had been applied to an infected ulcer of the cornea, leaving a dense, bluish-green deposit on the cornea. This deposit has now entirely disappeared, and the vision has risen to 20/10.

Therapeutics.

Treatment of Pneumonia.

In his article on the treatment of pneumonia, Hare, of Philadelphia, emphasizes two statements: 1, when called to care for a patient through an attack of illness the physician should be a watchman all the time and a therapeutist only when necessity arises; 2, in all acute infectious diseases, particularly in croupous pneumonia, patients may be divided into three classes; namely, those who are so mildly ill that all they need is good care and little or no active treatment; cases so malignant that nothing can produce a cure, and a third class between the first two, which is capable of cure only when the most skilful treatment is given. We must also keep in mind the fact that pneumonia is an infectious disease and runs a definite course and no attempt should be made to influence its regular course by any line of treatment. However, complications arise in a good percentage of the cases so that the skill and tact of the physician would have to be brought into action and opportunities will be afforded for the physician to show sense and knowledge of therapeutics. In typical cases the process passes through three stages, namely, the stage of hyperemia or engorgement, the stage of consolidation or red hepatization, and the stage of resolution. In cases of delayed resolution complications are liable to arise, which require special treatment. By the use of anti-pneumatoxin, endeavors have been made to antagonize if possible the injurious influences of the diplococcus pneumoniæ on the blood and different organs. If the efforts in this line of treatment are perfected the dangers and complications arising from an attack of pneumonia will be greatly diminished. As has been mentioned, however, the combating of dangerous symptoms which arise with the complications, and the strict support of the patient's condition and strength so that the tendency to exhaustion may be withheld, must occupy the attention of the practitioner.

If the physician sees the patient soon after the chill he may have opportunity, if the conditions are properly recognized, to arrest the severity of the disease and perhaps avoid an otherwise fatal illness. The patient should be ordered to bed at once in a large well-ventilated room, and if possible a competent nurse should be employed. The following should constitute the early treatment in order to establish good elimination and relieve to some extent the congestion:

℞. Hydrargyri chloridi mitis .....gr. iii-vi |20-40
Sodii bicarb .....gr. v-x |30-60

M. Sig.: At one dose, to be followed at the proper time by a saline cathartic.

The following may be administered to relieve the pain, cough, and to promote elimination by the skin:

℞. Pulv. opii et ipecacuanhæ .....ʒss 2|

Ft. chartulæ No. vi. Sig.: One powder to allay the pain, and repeat in three hours if necessary.

The following combination is sometimes used after administering the purging dose of calomel:

℞. Tinct. aconiti .....m. xv 1|
Tinct. opii camph. .....ʒiss 6|
Sol. ammon. acetatis .....ʒiii 12|
Syr. zingiberis .....ʒiii 12|
Aquæ q. s. ad .....ʒiv 128|

M. Sig.: One tablespoonful every two hours.

To establish renal elimination the following may be of service:

℞. Spts. etheris nitrosi .....ʒii 8|
Liq. ammon. acetatis q. s. ad .....ʒiv 128|

M. Sig.: One tablespoonful every four hours.

The question arises and is frequently asked as to the use of bleeding in the early stages of pneumonia. There can be no question as to the advisability of resorting to this method in strong sthenic individuals of middle age and with a flushed face, difficult respiration and strong, full pulse. In such cases blood to the amount of 8, 12 or even 20 ounces may be withdrawn from the arm of the patient until the pulse becomes soft and the respirations show improvement. No such depressing treatment should be resorted to, however, in feeble asthenic patients.

Rather than resort to venesection in these strong individuals other sedative measures may be taken during the first twelve or fifteen hours of the disease, by giving the patient a hot foot bath and placing hot compresses to the chest to relieve the pain, or if the fever is high, a cold compress changed frequently is of service. Internally the following is useful to depress the circulation and produce diaphoresis:

℞. Tinct. veratri viridis .....ʒi 32|

Sig.: Three minims every twenty minutes until three or four doses are given.

In the second stage of pneumonia different conditions are present and the treatment must likewise be changed. In this stage a greater amount of labor is placed upon a heart which has become more or less weakened from the toxic substances carried by the blood. It is in this stage that the heart and general strength of the patient demand the attention and therapeutic judgment of the physician. The right heart must necessarily withstand the increased pressure and obstruction in the pulmonary circuit. If it can properly do its work, then the physician is doing injury to his patient by the administration of cardiac stimulants in his anxiety to do him justice. The question then may be asked: What signs and symptoms must be present in this stage to guide the physician in his treatment? In reply, we would state that the character of the heart sounds are of importance as well as the condition of the pulse. If the second pulmonic is well accentuated and the heart regular, that heart is doing as good work as could be expected, showing as it does that hypertrophy of the right heart is well developed and in excess to dilatation; in other words, the right heart is competent. Consequently, to whip a competent heart is like whipping a team of horses which are pulling their heavy loads competently and smoothly. On the other hand, when the load drawn drops into a quagmire the team may be temporarily spurred on by the whip in order that they may put forth some extra strength to successfully extricate the load. In the same way when the right heart shows that dilatation is overcoming the hypertrophy as shown by the weakening of the second pulmonic, then the heart may, with advantage, be aided by the administration of heart stimulants. As a result of this weakening other symptoms will arise, such as increased cyanosis, the change in the character of the respiration, and perhaps the mental condition of the patient. As heart stimulants, the following may be employed:

℞. Strychninæ sulphatis .....gr. ¼-½ | 015-03
Spts. ammon. arom. .....℥iv | 16
Aq. camphoræ q. s. ad.....℥ii | 64
M. Sig.: One teaspoonful every three or four hours.

The foregoing may be given alternately with spiritus frumenti ounce one half to one ounce every four hours. If the cyanosis and the subjective symptoms of the patient increase, showing increased inability of the right heart to do its work competently, then a stronger stimulation must be resorted to. Digitalis has been greatly lauded in the treatment of this disease. It reduces the temperature and lessens the rapidity of the pulse, and is of use as a heart tonic whenever the pulse is of great rapidity. It may be given as follows:

℞. Infusi digitalis .....℥iii | 12
Potassii citratis .....gr. xx | 1 | 33
M. Sig.: At one dose, to be repeated in four hours.

The great tolerance for digitalis in pneumonia has been commented upon by many writers; but we must remember, in using it as a heart stimulant in the second stage of pneumonia, that this drug should be pushed only when there are positive evidences or indications of the right heart giving out. It has the disadvantage, especially the tincture, of contracting the peripheral blood vessels and thus increasing blood pressure, and this in turn throwing more work upon the heart. It is advisable then to decrease the peripheral blood pressure as much as possible and thus negatively stimulating the heart by lightening its burden. To do this we can depend upon no better class of drugs than the nitrites, which may be administered as follows, in order to dilate the peripheral arterioles:

℞. Spts. glonoini (1 per cent.).....m. xv | 1
Spts. ammon. arom.....℥v | 20
Tinct. cardamomi comp. q. s. ad.....℥ii | 64
M. Sig.: One teaspoonful every four hours.

The foregoing prescription may be given alternately with the digitalis, or given in combination as follows:

℞. Spts. glonoini (1 per cent.).....m. xxv | 1 | 66
Tinct. nucis vomicæ .....℥i | 4
Tinct. digitalis .....℥ii | 8
Tinct. gent. comp. q. s. ad.....℥iii | 96
M. Sig.: One teaspoonful every six hours.

In conjunction with the treatment of the heart in the second stage of pneumonia the organs of elimination must receive proper attention, especially is it necessary that the kidneys be properly stimulated and encouraged to do their work properly. Danforth, in his article in the "American Text-book of Therapeutics," makes the statement that a case of pneumonia is not hopeless as long as the kidneys are in active service, otherwise a fatal result may be expected. The hepatic stimulation should not be neglected and careful attention should be given to the bowels and skin.

If the third stage or that of convalescence proceeds favorably and with no complications, treatment by drugs is unnecessary. Good digestible nourishing food and proper amount of rest will usually suffice. If resolution is delayed and the cough troublesome the following may be given:

℞. Codeinæ sulph. .....gr. vi | 36
Ammon. carb. .....℥i | 4
Aq. camphoræ .....℥i | 32
Syr. tolutani q. s. ad.....℥iii | 96
M. Sig.: One teaspoonful every three hours.

The complications most likely to arise are, pleurisy, pericarditis, endocarditis and meningitis, which should be treated as independent diseases.

Medicolegal.

Particulars Required in Personal Injury Case.—The first appellate division of the Supreme Court of New York says, in the personal injury case of Steinau vs. the Metropolitan Street Railway Company, that it does not think that the plaintiff should be compelled to specify by a bill of particulars the injury complained of, its nature, location and extent. And while it thinks that an itemized statement of the expense that the plaintiff was put to for medical and surgical appliances was correctly ordered, it thinks that the particulars should be confined to such a statement, and that the plaintiff should not be compelled to furnish the defendant with the names and addresses of the physicians, the number of visits, and other particulars. But it holds that she might be required to state the number of weeks that she was confined to her bed as alleged in her complaint.

No Physician in Attendance at Trial of Rape Case.—In the case of People vs. Figueroa, where the defendant was convicted of having committed rape on the body of a child 6 years of age, the Supreme Court of California says that the fact that no physician was in attendance at the trial appeared to be due to the fact that no subpena was served on one. The sheriff was not the only party that could serve a subpena, and, he having neglected to make service, the defendant, if he desired the presence of a physician at the trial, should have requested a continuance until he could procure the attendance of such physician as he might have subsequently subpenaed. Not having done this, he had nothing, the court holds, of which to complain.

Temporary Indigestion and Informal Consultations.—The United States Circuit Court of Appeals holds, in the case of McClain vs. the Provident Savings Life Assurance Society of New York, that, having had "dyspepsia or indigestion at times" did not convict the insured of untruth in the sense of his contract of insurance, when he answered "No" to the interrogations in his application as to his having, or having ever had, any of an appended list of 50 or 60 diseases, including dyspepsia. Temporary indigestion, or dyspepsia at times, the court says, is too common an ailment, and not serious enough to suggest itself as a disease to one answering such a question. Again, it says that the catalogue of diseases, to each of which an interrogation point was appended in the application, was a long one, and embraced diseases of a serious character; so that, under the circumstances, the insured may well have ignored or forgotten the temporary indigestion from which he at times suffered, when called upon to say whether he had ever had,

among other diseases, the disease of dyspepsia. Then, there was this question and answer: "When and by what physician were you last attended, and for what complaint? A. Had no medical attendance." But the jury found that he had been attended by a certain physician for temporary indigestion, not material to the risk, while the evidence disclosed the fact that the physician was an intimate friend, with whom the insured was in the habit of having daily intercourse; that he kept a horse at the physician's stable; that they rode and talked together daily. The court holds that, as the physician never attended him at his house, his consultations, such as they were, as testified to by the physician himself, might well have been considered by the insured as informal and casual, and not within the category of medical attendance, as inquired about in the application.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

New York Medical Journal, October 19.

1 *Operative Preperitoneal Rupture of the Bladder, with the Report of a Case. John A. Wyeth.
2 *The Lane Lectures on the Social Aspects of Dermatology. Malcolm Morris.
3 *A Brief Statement of the Sanitary Work So Far Accomplished in the Philippine Islands, and of the Present Shape of Their Sanitary Administration. Charles R. Greenleaf.
4 *Advisability of Early Operative Intervention in Acute Mastoiditis: Report of a Case. Edward B. Dench.
5 *Report of the Medical Staff Attending the late President William McKinley.
6 *Report of Summer Work of Milk Commission of the Medical Society of the County of New York. Henry Dwight Chapin.

Philadelphia Medical Journal, October 19.

7 *The Case of President McKinley.
8 *A Symposium on the Czolgosz Case.
9 *The Trial of Czolgosz. George S. Graham.
10 *The Crime of Czolgosz, the Assassin. John B. Chapin.
11 *The Opinion of an Expert Who Examined Czolgosz. James W. Putnam.
12 *The Czolgosz Trial: A Unique Event. Charles K. Mills.
13 *Some Remarkable Features. Wharton Sinkler.
14 *Not a Case in Psychiatry. F. X. Dercum.
15 *On the Co-ordination of Respiratory Movements. R. du Bois Reymond.
16 *Some of the Ocular Affections of Childhood, Associated with Impairment of General Nutrition. S. D. Risley.
17 Address in Obstetrics. Davis S. Funk.
18 *The Case of President McKinley.
19 *The Simultaneous Employment of Analgesia Obtained by Spinal Cocainization and Ether or Chloroform Narcosis. George R. Fowler.
20 *The Practical Value of Blood Examinations in Medicine and Surgery. Thomas R. Brown.
21 Extrauterine Abdominal Pregnancy: Operation by the Vagina: Recovery. Charles G. Davis.
22 Purpura Hemorrhagica Following Acute Lobar Pneumonia; Recovery. H. L. Underwood.
23 A New Operating, Dressing and Examining Table. M. G. Burgess.
24 Lane Lectures on the Social Aspects of Dermatology. Malcolm Morris.

Medical News (N. Y.), October 19.

25 *The Case of President McKinley.
26 *Report of the Summer Work of the Milk Commission of the Medical Society of the County of New York. Henry Dwight Chapin.

Medical Record (N. Y.), October 19.

27 *The Case of President McKinley.
28 *Failure of the Knife in the Treatment of Cancer. Robert Reyburn.
29 *Report of the Summer Work of the Milk Commission of the Medical Society of the County of New York. Henry Dwight Chapin.
30 *Laboratory Aid in Surgical Technique. George B. Broad.

Boston Medical and Surgical Journal, October 17.

31 *The Value of the X-Ray in the Diagnosis of Renal Stone; Report of Four Cases. Paul Thorndike.
32 *Malignant Disease of the Tonsil. F. E. Hopkins.
33 Tubercular Peritonitis. (To be continued.) Henri T. Fontaine.
34 *Privileged Medical Communications. David W. Cheever.
35 A Brief Résumé of the Life and Work of Ambroise Paré. (Continued.) Charles G. Cumston.
36 Association of Anemia with Chronic Enlargement of the Spleen. (Continued.) Arthur H. Wentworth.
37 Gangrenous Appendicitis; General Peritonitis; Multiple Adhesions; Gangrene of Bowel Wall; Perforation of Bowel; Purulent and Fecal Abscesses; Operation; Drainage; Death; Autopsy. Charles L. Scudder.

Cincinnati Lancet-Clinic, October 19.

38 Preventable Disease in the Army of the United States—Cause, Effect and Remedy. W. O. Owen.

Pediatrics (N. Y.), October 15.

39 *Two Cases of Chronic Hydrocephalus in Infants Treated by Tapping and by the Introduction of Aseptic Air in the Place of the Fluid. Wm. Ewart and W. Lee Dickinson.
40 *Results of Tendon Grafting in Infantile and Spastic Paralysis. A. H. Tubby.
41 *The Value of Widal's Serum Reaction in the Diagnosis of Typhoid Fever in Children. J. H. Thursfield.

International Medical Magazine (N. Y.), October.

42 *Questions and Answers Regarding Syphilis.
43 *Syphilis May Be Benign, Semi-Malignant or Malignant. Louis A. Duhring.
44 *The Many Sources of Error in Problems Concerning Syphilis. G. Frank Lydston.
45 *Three Years of Active Constitutional Treatment Necessary. Orville Horwitz.
46 *No Responsibility Should Be Taken Regarding the Marriage of Syphilitics. Thomas G. Morton.
47 *Marriage of Syphilitics Safe After Five Years of Active Treatment. Edward L. Keyes.
48 *The Unrecognized Chancre. William S. Gottheil.
49 The Etiology of Syphilis. A. Robin.
50 *A Few General Remarks on the Management of Syphilis. Eugene Fuller.
51 *Treatment of Syphilis. Robert H. Greene.
52 *Syphilitic Affections of thhe Bronchi, Lungs and Pleura. Norman B. Gwyn.
53 Syphilis of the Nose and Throat. E. B. Gleason.
54 *Diagnosis and Management of Syphilis. Follen Cabot, Jr.
55 *The Curability of Syphilis. William S. Gottheil.
56 How Best to Diagnosticate Communicative Syphilis in a Wet Nurse. J. D. Thomas.
57 Syphilis of the Nervous System. D. J. McCarthy.

Providence Medical Journal, October.

58 The State Care of Epileptics. John M. Peters.
59 A State Sanatorium for Tuberculosis in Rhode Island—What Would It Accomplish? Jay Perkins.
60 Anesthesia in Obstetrics. Herbert G. Partridge.
61 Mental Enfeeblement. George F. Keene.
62 A Further Use of Hot Air. Frank E. Peckham.
63 The Nature of Hysteria. William McDonald.
64 Ectopic Gestation. Henry R. Brown.
65 A Case of Labor in Dislocation of the Uterus Following Ventro-fixation and Appendectomy. Herbert Terry.
66 A Case of Traumatic Emphysema of the Neck. Harry S. Flynn.

The Post-Graduate (N. Y.), October.

67 *Observations on Lateral Curvature of the Spine; Pathological, Clinical, Mechanical. A. M. Phelps.
68 Version. George L. Brodhead.
69 Examination of the Blood. Hermann Lenhartz.
70 Neurological Lecture (Tabes, Etc.) Philip Meirowitz.
71 Report of Clinic. W. C. Phillips. Henry D. Chapin.
72 Notes from the Clinics. D. B. St. John Roosa, Augustus Caille, Charles W. Allen, Otto Maier.

Medical Summary (Philadelphia), October.

73 The Home Treatment of Nasal Catarrh. (To be continued.) Edwin Pynchon.
74 Treatment of Typhoid Fever. M. K. Sturdivant.
75 Notes from My Practice. J. S. Leachman.
76 Hydrophobia: Its Symptoms, Treatment, Etc. (To be continued.) Wm. Alexander Armstrong.
77 Hearing. Edwin W. Pyle.

Archives of Pediatrics (N. Y.), October.

78 *Tuberculosis of the Female Internal Genital Organs—Secondary Infection of the Peritoneum and the Intestine. J. L. Duenas.
79 *Acute Recurring Respiratory Failure in the Newly-Born, with Symptoms Apparently of Bulbar Origin. Irving M. Snow.
80 The Feeding of an Incubator Baby. Charles W. Townsend.
81 *An Analysis of Thirty-two Cases of Congenital Heart Disease. John Lovett Morse.
82 Appendicitis in Children of Two Years and Under. J. P. Crozer Griffith.
83 Maternal Impressions—Report of a Case. B. K. Rachford.
84 Two Cases of the Bullous Form of Impetigo Contagiosa. Emelyn L. Coolidge.
85 Intestinal Obstruction from Typhoid Fever. W. F. Boggess.

Occidental Medical Times (San Francisco), October.

86 Plague Reports. H. A. L. Ryfkogel.
87 Some Gynecological Impressions Residual from Three Decades of General Practice. Wallace A. Briggs.

88 Incised Wounds of the Muscles, of the Occipital and External Carotid Arteries, and External Jugular Vein; Recovery. F. G. Walters.
89 Four Cases of Extrauterine Pregnancy treated by the Vaginal Route. Frank L. Adams.
90 Topical Treatment in Gynecology. George Wm. Davis.

Journal of Nervous and Mental Diseases (Nyack, N. Y.), October.

91 *A Tumor (Neuroglioma) of the Superior Worm of the Cerebellum Associated with Corpora Quadrigeminal Symptoms. Hermon C. Gordinier.
92 A Case of Progressive Unilateral Ascending Paralysis, Probably Due to Multiple Sclerosis. Charles S. Potts.
93 A Case of Progressive Muscular Atrophy and Tabes, with Autopsy. Joseph Collins.

Medical Times and Register (Philadelphia), October.

94 What Part Should Physicians Take in Municipal Affairs. C. F. Markel.
95 Chronic and Nervous Diseases. W. H. Walling.

Bulletin of the American Academy of Medicine (Easton, Pa.), October.

96 *Some of the Ethical and Sociologic Relations of the Physicians to the Community. S. D. Risley.
97 *The Abuses of Institutionalism. W. G. Carpenter.
98 *The Advantages of Civil Service Principles in the Conduct of State Hospitals for the Insane. Gershom H. Hill.
99 *Hospital Mismanagement. A. Goldspohn.
100 Hospitals and Sanatoria Founded, Owned and Controlled by the Medical Profession: A Case in Hand. H. Bert Ellis.
101 Institutionalism. John Curwen.
102 Care of Epileptics in Massachusetts. Everett Flood.
103 Institutionalism—What Is It? Elmer Lee.
104 *Tendencies in Hospitals for the Insane with Some Suggestions. J. E. Robbins.
105 *The Need of National Co-operation in the Establishment of Sanatoria for Tuberculosis. A. Mansfield Holmes.
106 *The Relation of the Clinical Laboratory to the Hospital. Henry W. Cattell.

Denver Medical Times, October.

107 The Institution of a National Medical Bureau. Carey K. Fleming.
108 Twentieth Century Surgery. Leonard Freeman.
109 Some Thoughts on Abdominal Surgery, with a Brief Report of Cases Operated upon Since January 1, 1899. I. B. Perkins.
110 A Few Etiologic Factors in Displacements of the Uterus. Clarence L. Wheaton.
111 A Cure for Consumption by the Inhalation of Medicine Through the Medium of Hot Air. J. Byron Sloane.

Chicago Medical Recorder, October.

112 A Brief History of the Chicago Medical Society from Its Origin to the End of Its First Half Century of Progress. N. S. Davis, Sr.
113 *Uric Acid Fallacies. Frank Billings.
114 *A Method of Blood Antisepsis. G. G. Taylor.
115 *The Home Treatment of Pulmonary Tuberculosis. Robert H. Babcock.
116 The Prevention of Hemorrhage in Ophthalmic Operations by the Use of a Solution of Adrenalin Chlorid. D. Winton Dunn.

Annals of Gynecology and Pediatry (Boston), October.

117 *Transversal Incisions in Celiotomy. Charles G. Cumston.
118 Three Cases of Epidemic Cerebrospinal Meningitis in Infants. John L. Morse.
119 Technique in Obstetric Practice, with the Exhibition of a Practical Antiseptic Labor Bag. H. Judson Lipes.
120 Studies in the Normal and Pathological Structures of the Ovary. (Concluded.) Mary Dixon Jones.

St. Paul Medical Journal, October.

121 Edward Jenner and Smallpox Before and After the Introduction of Vaccination. Burnside Foster.
122 Notes in Orthopedic Surgery. Franklin Staples.
123 Cesarean Section versus Craniotomy. J. W. Andrews.
124 Concealed Accidental Hemorrhage. H. H. Witherstine.
125 Some Experiences with a Smallpox Epidemic. Donald B. Pritchard.
126 Operation for the Relief of Pendulous Abdomen. A. E. Spaulding.

Annals of Surgery (Philadelphia), October.

127 A Contribution to the Pathology of the Sphincters. Edred M. Corner.
128 *Milton's Method of Exposing the Anterior Mediastinum Modified for Ligature of the Innominate Artery. B. Farquhar Curtis.
129 Abscess of the Liver. Ellsworth Eliot, Jr.
130 *Foreign Bodies Accidentally Left in the Abdominal Cavity. August Schachner.
131 The Worsted Truss in Inguinal Hernia. J. C. Hubbard.
132 *Pneumococcus Arthritis, Primary in the Knee-Joint. Dudley P. Allen and Cabot Lull.
133 Some Observations on Fractures of the Skull, Based on One Hundred and Forty-six Cases. Richard H. Harte.
134 Suppurative Pericarditis Following Appendicitis: Recovery After Incision and Drainage of Pericardium. Arthur H. Mann, Jr.
135 A Report of Two Cases of Facial Anthrax Treated by Injections of Carbolic Acid, with Recovery. Louis H. Mutschler.
136 The X-Ray and Photographic Technique Necessary to Bring Out Bone Detail in the Print. Eugene R. Corson.

Cleveland Medical Gazette, October.

137 Opinions in Relation to the Questions of the Special Committee of the American Medical Association, regarding the Prognosis and Treatment of Acute Gonorrhea in the Male. (Continued.)
138 The Urinary Analysis in 114 Consecutive, Unselected, Abdominal Sections Without a Death. Hunter Robb.
139 Chorea. James H. Taylor.
140 State Care and Treatment of Crippled and Deformed Children. F. H. Darby.

Journal of Comparative Neurology (Granville, Ohio), October.

141 The Cranial Nerves and Cutaneous Sense Organs of the North American Siluroid Fishes. C. Judson Herrick.
142 The Psychologic Theory of Organic Evolution. H. Heath Bawden.

Ophthalmic Record (Chicago), September.

143 A Case of Commotio Retinæ Caused by Contrecoup, with Persistent Blindness, Resulting in Complete Recovery. Henry A. Baudoux.
144 Tests for Heterophoria. G. C. Savage.
145 Is the Theory of the Vicarious Fovea Erroneous? A. Edward Davis.
146 On the Employment of Agar-agar in the Formation of a Stump After Enucleation or Evisceration. Geo. F. Suker.
147 High Degree of Conical Cornea, with Hyperopic Contraction. H. V. Würdemann.
148 Injury to the Eye from the Explosion of a Water Glass. S. Mitchell.
149 Further Remarks upon the Surgical Treatment of High Myopia, with the Report of an Additional Operation. Charles W. Kollock.
150 A Box for Mounting Eye Jars. Brown Pusey.

Peoria Medical Journal, September.

151 Summer Touring Amongst the Chicago Clinics.

The Canadian Practitioner and Review (Toronto), October.

152 *Address on Surgery. Dr. Jones.
153 *The Medical Treatment in Surgical Tuberculosis. W. B. Thistle.

Texas Medical Journal (Austin), October.

154 *The Systematic Doctor: Pelvic Peritonitis. W. C. Lipscomb.
155 The Public Health. J. S. Brownlee.
156 Perforated Intestine Searcher. Lucian Lofton.

St. Louis Courier of Medicine, September.

157 *Ureter Catheterism in the Male: A New Ureter-Cystoscope. Bransford Lewis.
158 Report of a Case of Obstructive Prostatic Hypertrophy: Complete Retention; Bottini Operation; Recovery of Ability to Urinate Voluntarily. Bransford Lewis.
159 *Do We Treat Syphilis Properly by Sparing the Patient in the Primary Stage? Charles O'Donovan.
160 Surgery of the Mammary Gland. W. M. Wright.
161 Dangers from Quackery. Isadore Dyer.
162 On Making and Closing Abdominal Incisions. J. Shelton Horsley.
163 La Grippe with Pulmonary and Cerebral Complications. Marie L. Grote.
164 Some Hints on the Management of Laparotomy Cases. Frank A. Glasgow.
165 Tuberculosis of the Cervical Glands, Tendon Sheath and Hip Joints: Compound Comminuted Fracture of the Humerus, Etc. Nicholas Senn.

Atlanta Journal-Record of Medicine, October.

166 *On the Use and Abuse of Nasal Sprays. Dunbar Roy.
167 *Factors Influencing the Severity of Syphilis. Bernard Wolff.
168 *Continued Fever, or a So-called Ridge Fever in Upper South Carolina. J. H. Moore.
169 Report of a Surgical Clinic (Jaw Traumatism). J. S. Greenleaf.

AMERICAN.

1. **Rupture of the Bladder.**—Wyeth reports a case where bladder rupture occurred during a surgical operation from an effort to distend the organ in order to reach it by the suprapubic route. He thinks that, while the case is rare, it would be well to have a search made for similar ones. He has performed suprapubic cystotomy between sixty and seventy times and has employed as much as twenty-four ounces of fluid to distend the bladder, but never before had any trouble.

He thinks in cases where the habit of frequent micturition has prevailed for several years, leaving the organ in a somewhat permanently contracted condition, it would be advisable to be content with the difficulties and possible dangers of operating through a narrower incision with from eight to ten ounces of injected fluid rather than to run the very small risk of rupture by employing a larger quantity. In his case the patient recovered successfully.

2. **The Lane Lectures.**—This sixth lecture by Morris is devoted to the light treatment—the Finsen method—and especially its employment in lupus. He has come to look favorably on it and thinks it the best treatment for this condition, though it has its disadvantages in certain cases. He expects a still more brilliant future for the *x*-ray and the light treatment.

3. **Sanitation in the Philippines.**—Greenleaf gives an account of the conditions existing in the Philippines at the time of the American occupation, which were certainly bad, and of what has been done since that time by our sanitary authorities. Smallpox has been to a large extent exterminated. A number of contagious diseases, such as bubonic plague, typhoid and others, have been more or less thoroughly controlled. Much valuable work has been done in the laboratory. A Department of Public Health has been organized which has regulated matters successfully and the prospects for the future are in this respect the very best. When we reflect that some of the diseases found among those people are virulent in the nature of their infection, and in other tropical countries quickly develop into epidemics which are attended with frightful mortality, and that these people have been living under conditions of hardship and suffering, it is a matter of congratulation that so much success has been obtained and that the ratio of sickness in the army has been at times lower than has been observed in the tropical service of any other nation. He knows of no tropical islands in the world that have a better climate than the Philippines, but the natives have not been instructed how to take care of themselves. The sanitary measures had a pretty nearly virgin soil to work on.

4. **Mastoiditis.**—After reporting a case Dench points out the advisability of early operative interference and the dangers of delay.

5.—See also THE JOURNAL of October 19, p. 1029.

6.—See editorial in THE JOURNAL of October 19, p. 1042.

7.—See also ¶5, above.

8, 9, 10, 11, 12, 13, 14. **The Czolgosz Case.**—This issue gives a number of opinions in regard to the assassin, among them one from a lawyer who considers that the statement of the counsel for the criminal of their opinion that he was insane was unjustified as they did not present any evidence to that effect. Drs. Chapin, J. W. Durham and others remark on Czolgosz's mental condition, maintaining that he was justly convicted and that punishment should follow. Dr. F. X. Dercum does not consider the case one that calls for medico-legal decision. It does not belong to psychiatry, but to that of the psychology of crime.

15. **Co-ordination of Respiratory Movements.**—Du Bois Reymond argues for the existence of a respiratory center and points out what he considers a new reflex. When the thorax was compressed, glottic respiratory movements appeared which could not be induced in dead animals. All known sources of excitation of the respiratory centers were excluded by the conditions of the experiment, complete apnea and complete pneumothorax—or in several cases section of the vagus below the origin of the recurrent nerve—hence he thinks it must be due to a hitherto unknown kind of reflex in which the passive movements of the thorax act as a stimulus, giving rise to an afferent impulse exciting the motor center of the larynx. For sensory organs originating this impulse we must look to the sensory organs of the thorax articulations, tendons and muscles. The afferent channel must follow the course of the intercostal nerves and reach the reflex center by way of the spinal cord, the section of which, below the medulla, arrests the respiratory movements though artificial respiration is continued. The muscular sense or posture-perceptive sense of the thorax will have to be at least in part effective and the co-ordination of respiration thus shown to be exactly analogous to co-ordination of different muscles in the movements of the limbs.

16. **Ocular Affections of Childhood.**—Two cases are reported showing impaired general vitality and faulty metabolism, manifested not only by abnormality in this, but by a group of general and ocular symptoms, headache, general malaise, precarious appetite and variable temper. With these there was asthenopia, undue sensitiveness to light, inability to use the eyes with comfort, impaired acuity of vision, injected lid-borders and in both cases there was at the beginning congenital hypermetropic astigmatism. Risley thinks that in the absence of this congenital anomaly of vision the pathologic ocular conditions would not have occurred from the existing faulty metabolism. Another inquiry suggests itself: How far does the eye-strain of school children influence the general health? He thinks this hardly needs a demonstration.

18.—See also ¶5, above.

19. **Combined Analgesia.**—In order to avoid so-called mental shock in nervous persons, Fowler has been led to attempt the combination of spinal analgesia, and general narcosis with very satisfactory results. A very small amount of the general anesthetic agent is used to quiet the patient after the preliminary spinal cocainization and he thinks that the objections due to these patients being conscious of what is being done, have been quite thoroughly obviated. He is not aware that the suggestion has been offered or carried into effect of producing slight narcosis for the purpose of the spinal lumbar puncture or of combining narcosis for obliterating both the touch and sensation and the mental disturbance with the analgesic effects of spinal cocainization. Two cases are reported.

20. **Blood Examination.**—Brown reviews the advantages of blood examination, showing what different elements we observe in an analysis of the blood and gives the forms of disease in which the methods have been found of advantage. The diagnosis of typhoid fever has been very largely cleared up by the Widal reaction. There are certain forms of primary anemia in which the diagnosis is rendered possible only by blood examination. Lymphatic leukemia is by this means diagnosed from Hodgkin's disease, tuberculous or syphilitic adenitis and sarcomatosis of the glands, while splenomyelogenous leukemia is differentiated from Banti's disease, chronic malaria with enlarged spleen, tuberculosis or syphilitic malignant growths of the spleen, hydronephrosis or renal or ovarian neoplasms. In diabetes, the Williamson test would be of great value and too little has been done in connection with the Justus test in syphilis. The blood conditions in diphtheria and scarlet fever are mentioned, a high percentage of myelocytes in the former being regarded as an unfavorable sign by Engel, while several authorities regard an increase of eosinophiles in the latter disease as a favorable sign. In anemia, whether primary or secondary, the prognosis is governed by the blood examination. The study of leucocytes, especially in surgical cases, is also mentioned and in exanthemata where the presence of leucocytes point toward one or the other condition. The value of leucocyte counting in surgery is important, especially in appendicitis. Two cases are reported showing its value.

25.—See also ¶5, above.

26.—Ibid., ¶6, above.

27.—See also ¶5, above.

28. **Cancer.**—Reyburn argues against the operative treatment of cancer with the knife. He says that when an incision is made in any part of the body for the removal of a malignant growth we at once provide and lay wide open for infection every vein and lymph channel in the space operated upon. He asks the question: Can we substitute for it anything that will prevent this systemic infection? He thinks this can be done by taking advantage of a substitute for the knife, such as the electro-cautery or, in a limited number of cases, the use of arsenic or chlorid of zinc for the removal of morbid growths. He quotes the successful results of Dr. John Byrne, who utilized

the electro-cautery. The best reason for the employment of this operation is that it is absolutely aseptic and a very significant fact is noted by Dr. Byrne, namely, that when the growth does recur in cases that have been operated on, it rarely does so in the cicatrices produced by the action of the electric cautery on the tissues, indicating that the vitality of the contagium, whatever it may be, has been destroyed and rendered harmless. The objection may be urged, he says, against Byrne's method that it is not applicable for the removal of cancers of the breast or large cancerous tumors occurring elsewhere in the body. He suggests that in such cases it would be well to immediately follow the knife with the electric or thermo-cautery. Arsenic and chlorid of zinc produce layers of lymph under and around the former seat of cancer which prevent infection and he has only recently begun to use this method of treatment; he can only say that the results so far are exceptionally good and he hopes others will test them.

29.—See also ¶6, above.

30. **Surgical Antiseptics.**—Broad gives an account of experiments made with various aseptics on a pair of hands known to be infected, using first bichlorid of mercury after scrubbing with green soap and water, soaking the hands in bichlorid 1 to 2000 or 1 to 4000 for periods varying from five to fifteen minutes. In every case the culture test always developed a staphylococcus. For two weeks they worked this way without better results, then the permanganate-oxalic acid method was tried and, as with the bichlorid method, finger scrapings and pieces of the skin in culture media always developed the staphylococcus aureus. Formalin was next used, in strength varying from 1 to 4 per cent. With it results were at first more gratifying, but at no time did the growth of the microorganism fail to appear. Then followed a scrubbing with green soap with no better results. Finally the subject became disgusted and refused to be experimented on further. Here the infection had extended over a period of three months and persisted in spite of strong aseptics. He thinks this is evidence that the unprotected hands may be, and often are, a source of infection even though they are washed and disinfected. The probability of silk being a cause of infection led to some work with it to show just when it was rendered sterile by boiling. Different sizes from 1 to 20 were first infected with the pure culture of staphylococcus pyogenes aureus. They were boiled for from twenty to seventy minutes, the pieces being removed under aseptic precautions every five minutes. The water was brought to a boil before the silk was dipped in. He found, as might be expected, that the larger the silk the longer the time required to render it sterile. No. 20 silk required 60 minutes; No. 16, forty-five; No. 12, forty; No. 8, thirty-eight; No. 6, thirty-five; No. 4, thirty; and all below No. 4 were boiled 25 minutes, excepting No. 1, in which no growth was obtained after 18 minutes' boiling. This was perhaps a pretty thorough test as probably no ordinary silk could be so absolutely infected as this was, but he thinks it would be safe to use this method. Silkworm gut was also tested, but no growth could be obtained after forty-five minutes' boiling. Catgut is a matter of considerable importance. The material from which experiments were made was prepared by the bichlorid method. After the fat was dissolved it was put in a 1 to 1000 alcoholic solution of bichlorid and preserved in alcohol or glycerin alcohol. The results were fairly good and it was exceptional that any infection was found. Formalin, often so satisfactory, in a size larger than No. 2 was uncertain. The ammonium sulphate method was tried, but the strength of the catgut was much impaired. The most perfect method, in the author's opinion, is the sterilization of catgut by dry heat, subjecting the material in sealed envelopes at 300 F. for three hours, then following it with the same heat for one hour to kill any spore. Culture-tests have shown that catgut prepared in this way is absolutely sterile, and clinical experience has borne this out. Rubber gloves boiled eighteen minutes were sterile, while after fifteen minutes they still gave a culture. Experiments were made with the expired air, a mask was devised and worn for one hour, at the end of which time pieces of gauze through which the wearer had breathed were removed. Examination always gave a growth, largely staphylococci and diplococci, and an occasional bacillus. In this way we may be able to explain an occasional cause of suppuration when an assistant or observer has been present suffering from some suppurative disease of the nose or mouth.

31. **X-Ray in the Diagnosis of Calculus.**—Four cases are reported and illustrated, showing the utility of the *x*-ray in renal calculi. The results are to a certain extent negative, but Thorndike believes there is more to be expected from *x*-ray photography in this condition. If the stone contains only a small amount of urates or some other mineral salt to give a shadow, it is capable of being recognized with some degree of precision by properly experienced observers. He notices the statement he heard made at a lecture, of the impossibility or impracticability of lifting out the kidney on to the loin, and splitting it along its convex border to expose its interior to easy examination. He has not experienced this difficulty and he has used this exploratory technique in six instances and without the least trouble from hemorrhage or otherwise. In some stout people it may be impossible, but in many of average weight the procedure is not difficult.

32. **Malignant Disease of the Tonsil.**—This is a rare condition, but its symptoms and pathology are discussed by Hopkins. He finds that males are more apt to be cancerous than females. He gives the symptoms of sarcoma and carcinoma in particular and says that unilateral enlargement in an adult should raise suspicion of malignancy, but absolute diagnosis is not always easy. He reports one case where the growth removed proved to be lymphatic sarcoma, the patient dying from recurrence three years from the time he first came under observation. Another case where the patient died within a month from pneumonia. He says that if a general rule were to be formulated for these conditions it might be: Enucleate the tumor with the finger and blunt instruments if the case is seen early and before the surrounding structures are invaded. Remove also cervical lymphatics if they are involved. If the new growth has gone beyond the stage which admits this shelling-out process with reasonable hopes of success, then external operation may be performed. In cases that are inoperable when first seen, palliative removal of the growth might be done by blunt dissection and Dr. Coley informs the author that he has treated one case with erysipelas toxins with the result that though the patient died of recurrence, it was eight years later. Massey has reported cures by the cataphoric destruction of cancer cells and though the current he uses is sometimes quite strong, it is well to know of every possible resource that may be available.

34. **Medical Secrecy.**—Cheever pleads for a change in the Massachusetts law to make it similar to that of New York in regard to medical confidences. The physician should not reveal any facts unless in case of crime where justice would miscarry if he refuses to tell the secret. Let the criminal law court decide and relieve the doctor of his obligation of secrecy.

39. **Hydrocephalus.**—After reporting two cases, in one of which there were eight tappings with an aggregate of 11 pints of fluid removed, Ewart and Dickinson offer the following provisional conclusions: 1. With due precautions the fluid of chronic hydrocephalus may be completely evacuated from the yet unclosed skull of infants, and aseptic air may be allowed to take its place. This operation may be repeated without detriment and with scarcely more risk than belongs to the usual method of paracentesis. 2. In favorable cases of moderate effusion, such as Case 2, a single operation may suffice. Continued oozing from the puncture for a few days after the removal of the tubes is not unfavorable. 3. In cases of considerable effusion an obvious indication is to relieve the brain from the weight and from the pressure of the fluid. The evacuation is facilitated by the introduction of aseptic air. In Case 1 this treatment proved to be of decided advantage. By a timely repetition of the operation a hydrocephalic infant might be enabled to carry the weight of the head, and if the treatment were begun sufficiently early, permanent damage to the brain tissue might be averted and a normal development might

perhaps ensue. 4. In large heads, while hydrocephalus persists, a considerable splashing sound is readily obtained. There is obvious risk in eliciting this sound by forcible succussion, and for the same reason any abrupt movement of the head should be avoided.

40. **Tendon Grafting.**—Tubby reports cases of talipes calcaneo-valgus, talipes calcaneus, equino-varus, calcaneo-varus, and spastic paralysis treated by tendon grafting. Of 11 cases of paralytic talipes, 6 have shown good results, and 5 fair, meaning by "good" that the results in these cases were fully attained and improvement was permanent, and by "fair" that a partial improvement was secured. In no case was there absolute failure. In four operations on the forearm for spastic trouble, the results were good in three and partial in one. He describes the technique of his operation at some length. He thinks tendon grafting has a future before it, but it will have to be used with discrimination. It is useless in cases of flail-like joint, where all the muscles are badly affected, and it should not be employed in slight cases of paralytic valgus or varus or slight equinus, in all of which section of the tendo Achillis will be sufficient. It is an operation that requires the greatest care in the selection of cases and muscles to be employed and careful watching of results of operation for years afterwards.

41. **Widal Reaction in Children.**—Thursfield has employed the test in more than 100 cases, in 42 of which he had a positive reaction. In some cases he has repeated this several times. Doubtful reactions are very seldom met with, and repetition with a different culture has not been doubtful. He has employed, as a rule, a broth culture of typhoid bacillus, generally not more than twenty-four hours old, made from a stock culture occasionally renewed from a trustworthy source. Of the 42 cases in which the reaction was positive, several were cases in which there would have been considerable difficulty without it, and there was no clinical example of typhoid fever which failed to give a reaction. He thinks, therefore, that the test is at least as reliable in children as in adults, or even of greater value. The occurrence of a previous attack of typhoid can usually be excluded in children and thus one cause of error common in the adult is avoided. Judging from the cases that he has been able to test before the end of the first week, he thinks the reaction occurs earlier in children than in adults. There is also among children a fever which, while it strongly resembles typhoid, does not run the course or present all the symptoms. He thinks it is possible that it may be an abortive typhoid, but the use of the serum reaction has shown that there are a few of these cases which are true typhoid.

42. **Syphilis.**—A number of questions were submitted to various syphilographers and their answers obtained. The questions were as follows: 1. What is the safest course in the diagnosis? 2. Has the range of remedies in syphilis increased in recent years? 3. What is the possibility of the secondary period being skipped in cases of severe tertiary lesions? 4. How far should the physician assume the responsibility of sanctioning matrimony in syphilitics? 5. What is the possibility of the transmission of syphilis in the progeny of a tertiary syphilitic? 6. Are there any cases where unequivocally syphilitic fathers have had perfectly healthy children?

43.—Dr. L. A. Duhring concludes that it is safest to proceed slowly in the diagnosis. In cases where there is a doubt, give the patient the benefit. Prolonged observation will furnish aid. There are two kinds of syphilis, the benign or mild form and the malignant or semi-malignant, the latter rebellious to treatment. The range of remedies has surely increased of late and the specific remedies not so much relied on as they formerly were. There is no doubt that in some cases secondary lesions are skipped, but the tertiary symptoms may not be severe even then; unless the case has been neglected as to treatment of the primary and secondary periods, the chances are in favor of any tertiary symptoms being mild. Syphilitic patients are apt to take the consensus of a number of physicians' opinions in regard to matrimony. In the mild cases three years should suffice to render subjects free from taint; in very mild cases even two years. The advisor must keep in mind whether he is dealing with the benign, semi-malignant, or malignant type. The same rule—the benignancy or malignancy of the disease in the parents—governs the healthfulness of children. Syphilitic fathers, after proper treatment, may undoubtedly have healthy children. The length of time they may remain healthy is a question hard to answer. In a general way, however, in mild cases, the question may be answered in the affirmative.

44.—Dr. G. Frank Lydston does not think the positive diagnosis of primary syphilis is so frequently possible as is generally supposed. There are many shades of variation between the classic type which the expert physician can diagnose with his eyes shut and the slight parchment induration which often resembles slight inflammatory induration. The mixed forms are apt to give trouble, and a mistake may occur in the diagnosis to any one, however expert. He does not think the therapeutic remedies have been very much enriched by any reliable remedies, but there have been some modifications of treatment which have been of great value. Among these is the hypodermic use of mercury, and one of the most valuable adjuncts in his experience is potassium chlorate in full doses. The exhibition of this drug in alternation with mercury is of great value, not only on account of the lessening of mercury, but for the curative action of the chlorate itself. He is skeptical as to the secondary period being ever skipped, but it may be slight and not noticed. As regards marriage the physician should assume no responsibility whatever, but should tell the patient that we have no known means of pronouncing a patient permanently cured. He is skeptical as to the possibility of transmission of syphilis to the offspring of tertiary syphilitics. He believes that in a large number of cases syphilitic fathers may have perfectly healthy children. All these cases, however, had late syphilis. He does not know of a case begotten in the first year of syphilis which was healthy.

45.—Dr. Orville Horwitz answers the first question by saying: Wait for the first manifestations of the secondary symptoms. The second question he answers in the negative. The third, that in some irregular types the secondary period is absent. To the fourth question he says that if the syphilitic has had three years of active constitutional treatment and is then kept under observation for one year and no signs of the disease have appeared, marriage may be advised with safety. Children born of parents suffering from benign syphilis are healthy unless the parents are affected with the irregular form of the disease, when both secondary and tertiary symptoms are present. The danger of transmitting the disease rarely reaches the vanishing point until about six years after infection. Fathers suffering from tertiary syphilis may have healthy children.

46.—Thomas G. Morton advises that the safest course of diagnosis is to consult a competent medical man and thinks that the range of remedies has not materially increased. He believes that the secondary symptoms may be slight and unnoticed, but the disease follows a regular course. The physician should assume no responsibility in sanctioning marriage in these cases, and any person who has been infected might be expected to transmit more or less taint. So far as his observation goes apparently healthy children have resulted from the marriage of syphilitics, but at any time the disease might appear in them.

47.—Edward L. Keyes advises caution as to the diagnosis, believes that the therapeutic remedies have increased and that the secondary period can be skipped absolutely, but in most such cases it is only overlooked. He thinks marriage can be sanctioned five years after infection, if there has been thorough treatment during these years, and believes that syphilis is never transmitted, as such, to the third generation. Fathers infected with late syphilis may have healthy children.

48. **Unrecognized Chancre.**—Gottheil believes that attention to the following points will prevent error in the diagnosis in the vast majority of cases: 1. The presence of tumor as the original lesion. 2. The painless and indolent character

of the tumor. 3. Coincident with its appearance, or very shortly after, there is a peculiar stony induration of the nearest lymphatic glands. This is to be carefully distinguished from the later general adenopathy. 4. The time a chancre takes for its development and retrogression is only a few weeks. Tuberculous infection takes months, and cancer even years for its development. 5. Early in the history of chancre, but later in the local adenopathy referred to, there occur unmistakable signs of general infection, such as pain, especially nocturnal, in the joints, synovitis, lymphadenitis, exanthems, etc. They are frequently slight and fugacious, and any patients presenting a tumor with these characteristics should be carefully and systematically examined at short intervals for their appearance.

50. **Management of Syphilis.**—The insidiousness of the disease is insisted on by Fuller, who remarks that the unexpert may make quite a percentage of mistakes in diagnosis. The patients dreading it at first, soon come to slight the trouble and may reject their doctor's diagnosis and neglect treatment, or they may overdo the matter. Those who have suffered from the secondary manifestations are generally convinced and stick faithfully to treatment, and escape later severe trouble. In cases of locomotor ataxia, for example, he has observed it is remarked that the early symptoms of the disease were trifling and the treatment correspondingly light and inefficient.

51. **Treatment of Syphilis.**—Fifteen years ago Greene commenced to treat his syphilitic patients practically in the following manner: "All constitutional treatment, except the expectant, was postponed until the appearance of erythema—the initial lesion being treated generally by the mildest of local mercurial preparations, such as the plaster, or weak solutions of bichlorid or black wash. Then came a vigorous administration of the proto-iodid internally, tonics and liberal diet, ordinary rules of hygiene being enjoined. After the disappearance of the erythema, a course or two of inunctions were followed by a return to the proto-iodid internally. This treatment was maintained continuously for several months. Then there were intermittent periods in which no treatment was administered, alternating with more inunctions, or with mixed treatment—that is, mercury and iodid combined; or inunctions externally and the iodid internally. The patient was kept under observation for a period of two years, and at the end of that time considered practically cured. Cases which were extremely anemic, or did not react well to mercury, were given a liberal supply of tonics for a few weeks, such as iron, quinin and strychnia, in combination with the appropriate treatment of any local lesions on the skin or mucous membranes, until the patient had become strengthened and the return to mercury would not generally be followed by distressing effects. He still follows this method to a great extent. He has found, however, that neurasthenia is not only caused by but may be already existent in syphilitic subjects and require more care and attention than the disease itself. He would, therefore, use cold baths, douches, static electricity and other methods, dietetic and otherwise, for this complication. Iron in some cases of non-irritating type, glycero-phosphate of lime, and so on, are not to be despised. Blood examination is important in every case. He believes now that the constitutional treatment should be commenced as soon as the patient and physician are both sure that they have an attack of syphilis to combat. Individuals who have been heavy drinkers do not thrive as well on mercury given internally as by administration by means of baths, or inunctions. Gout, rheumatism and tuberculosis are all rendered more acute by a syphilitic infection. The excretory organs must be kept in a good condition, especially the skin, and Greene advises some form of exercise, severe enough to induce per-piration, followed by a shower bath or a light Turkish bath once or twice weekly, or mercurial fumigation. He believes that the result of treatment of late years is better than that of earlier times, as we see fewer people disfigured. Patients who have suffered from syphilis should be advised to keep up their tissue vitality for the rest of their natural life, even after there have been no symptoms, and should devote considerable time and attention to exercise, baths, etc., to keep their excretory organs in the best possible condition.

52. **Pulmonary Syphilitic Disorders.**—Gwyn describes the manifestations of syphilis in the lungs, pleura, etc. Interstitial pneumonia may occur in these cases, similar to the same disease from other causes. The diffuse suppuration of the lungs affects usually the middle portion, rarely involving the apices, and advancing toward the periphery. In early syphilis there may be a catarrh or fibrinous pleuritis. The later pleural changes are gummatous and peripheral pleuritis occurring with interstitial pneumonia. Syphilitic bronchial affections may exist alone or may be associated with other lesions, laryngitis, etc. In hereditary disease, while pneumonia of the fetus is usually found in still-born infants, structurally it resembles the diffuse pneumonia infiltrations. The rules of specific treatment in general will apply to treatment of pulmonary affections.

54. **Diagnosis and Management of Syphilis.**—Cabot emphasizes the following points: 1. Importance of never treating a suspected case of syphilis with mercury till sufficient evidence of the disease is present to overcome all doubt in physician's and patient's minds. 2. Dangers of syphilis: its relation to the patient's future and the community at large. 3. Length of treatment: its importance and the prognosis. 4. The relation of the disease to marriage, and the begetting of healthy children.

55. **The Curability of Syphilis.**—The conclusions deduced by Gottheil are as follows: 1. Syphilis is a curable disease, and may even, with restrictions, be called a self-limited one. 2. While the cure of a given case can never be affirmed with scientific accuracy, the chances of its being the fact after a certain time under proper treatment are so great that it may properly be claimed to have been effected. 3. Practically, a patient who has been properly treated through the active stages of his disease, and who has had no manifestations of it for several years thereafter, may be regarded as cured, and may be told so.

67. **Spinal Curvature.**—Phelps gives the results of dissection in cases of spinal curvature and points out what he thinks are the mistakes in the treatment. He holds reliance in gymnastic exercises for this condition one of the greatest fallacies that have ever been offered, and that the various machines that have been devised have no possible effect on the curvature and rotation per se. The only possible good they can do is to assist in holding up the spine, but so long as the ribs are bound together by contracted intercostal muscles, that force can be of but little avail. The only possible mechanical treatment is the using of force under anesthesia that would be unendurable without it: breaking away adhesions or dividing some by the knife; but he has never yet succeeded in straightening a growth in which bone change has taken place. He believes in gymnastic exercise, breathing exercises to expand the chest, elevate the ribs and change the form of the thorax; but these should be performed while the corset is on. They should be light and not severe gymnastics. He believes the aluminum corset is the best substitute for many of the braces and corsets now worn in Pott's disease and lateral curvature, and points out the advantages.

78. **Tuberculosis of the Internal Genital Organs.**—Duenas reports a case with elaborate microscopic examination in which there was peritoneal tuberculosis with involvement of the ovaries and tubes in a child eleven years old. The diagnosis was made largely on the lymphatic constitution of the patient, unfavorable hygienic surroundings and antecedents of the disease; against this was negative hereditary antecedents. The symptoms were peculiar. The stage of anasarca, accompanied by increase of urine at first, suggested the idea of a transient nephritis; then followed a period of four months with fever, diarrhea, emaciation and later three months of hypopyrexia, beginning with hypogastric pain and abdominal enlargement. The case shows that in the absence of a bacillar purulent vaginal discharge it is not even possible to

presume the presence of primary tuberculosis of the female genital tract in chihldren. The operation that was performed was followed by apparent recovery.

79. **Respiratory Failure in the New Born.**—Snow reports two cases and one taken from the literature in which children born after normal labor, and apparently in perfect health for a few days, were taken suddenly with failure of respiration associated with opisthotonos. In one of his cases the child recovered; also in Dr. Keith's case, which is reproduced. He does not explain the condition, and thinks that we have here a new disease as yet unnamed. It may be that there is some transitory but powerful infection of the medulla. He thinks the cessation of breathing is due to some strong inhibitory impulse from the respiratory centers in that region. While the opisthotonos would suggest tetanus, the other characteristics of that condition are not present. In the case reported by Dr. Westcott that recovered, it was suggested that it was due to pressure on the medulla, the rapid clearing-up suggesting congestion or slight edema.

81. **Congenital Heart Disease.**—From a study of some thirty-two cases of congenital heart disease Morse considers the following points: 1. The considerable proportion of cases in which the cardiac lesion was discovered during a routine physical examination, there having been no symptoms referable to the heart. 2. The length of time which the condition may exist without the development of any symptoms, several cases having shown no symptoms at three and four years of age. 3. The comparative mildness of the symptoms in cases of patent foramen ovale. 4. The recovery from lesions which from physical examination were apparently the same as those in cases which resulted in chronic invalidism or death.

91. **Cerebellar Tumor.**—In a case here reported by Gordinier the general symptoms were double optic neuritis passing on to atrophy, intense and continuous headache, vomiting, dizziness, slow cerebration and gradual loss of memory. The focal symptoms were an ophthalmoplegia interna, double incomplete external ophthalmoplegia, marked cerebellar gait, a coarse tremor of the hands and ataxia in the left leg, together with choreiform movements. The autopsy showed glioma involving the central part of the superior worm, which in its growth forward into the mid-brain region destroyed the superior medullary velum, the interior of the posterior quadrigeminal bodies, especially the right, the central gray matter surrounding the aqueduct of Sylvius, the dorsal part of each ocular nucleus as well as the nuclei for the trochlear nerves, the tegmentum in the region of the red nuclei, and the superior cerebellar peduncles at their point of decussation, involving most, the fibers coming from the left side. He analyzes the symptoms with special reference to Nothnagel's statement that in tumors in the region of the corpora quadrigemina, the chief localizing symptoms would be a cerebellar gait and double ophthalmoplegia, especially involving the superior and inferior recti muscles. Gordinier considers his dictum too dogmatic and holds that the distinction between corpora quadrigeminal and cerebellar tumors is at times absolutely impossible.

96.—See abstract in THE JOURNAL, xxxvi, p. 1654.

97.—Ibid., p. 1730.

98.—Ibid.

99.—Ibid., p. 1731.

104. **Tendencies in Hospitals for the Insane.**—This article contains some remarks by Robbins as regards prevailing tendencies in asylums. He thinks there is not much liability to dangerous radicalism, but that the tendency is rather to ultra-conservatism. Advances make their way rather slowly in these institutions. The trained nurse, who has become so indispensable in general hospitals, makes her way slowly here, but she must add to the requisitions of the general nurse, the ability wisely to control unreasonable people. He points out the needs of the asylum nurse and remarks that it is to be feared that the nursing force in these institutions is not equal to the demands. There is the danger of too much commercial spirit in these institutions; wages rather than high ideals of the service are too much regarded. As regards pathologic laboratories, he thinks they may be overestimated in asylums. The average asylum physician has neither the training nor the time for such work. A central laboratory, as in New York, would probably result in better original work. The cases, however, should be thoroughly studied in the asylum, and rigid and systematic diagnosis should be made. Another thing that is slow in coming in asylums, is a properly equipped operating room with modern instruments and appliances. Physicians should keep well in the current of medical progress. The medical staff is usually made up of young physicians who have just served a term in the general hospital. They are required to be on duty day and night, Sundays and weekdays throughout the year. The work is not usually so hard and exacting, but it becomes monotonous, and as a rule they are not allowed to marry, which deprives them of the comforts and enjoyments that come from a home life. The best class of men is apt to avoid these institutions, and others that do come see that their stay can be only temporary and become indifferent or restless and discontented. The mechanical promotion according to seniority is also discouraging. Isolation and the lack of necessities for improvement tend toward deterioration. Association with the insane is not likely to do any mischief; it is the cutting off from external stimulating influence. He remarks that two opposite views are held as to how to get employes to render the most service. One class of superintendents have recourse to the introduction of frivolous amusements for their employes, etc., while others find that efficient services are only to be expected from the sincere and thoughtful, and would encourage moral and religious influences and employ only rational and elevating recreations. He thinks the latter plan the best.

105.—See abstract in THE JOURNAL, xxxvi, p. 1731.

106.—Ibid.

113.—This article has appeared elsewhere. See THE JOURNAL of September 28, ¶130, p. 868.

114. **Blood Antisepsis.**—The method here suggested by Taylor is the use of hydronaphthol, which he considers innocuous when given in a solution of olive oil in doses of 12 gr. daily. In no case was there any untoward effects from the drug and there seemed to be a decided benefit in the symptoms. He has used it in acute phthisis, in typhoid and in other diseases. The ideal method of administration would be intravenous injection in whisky or 50 per cent. alcohol, slightly warmed. It could then perhaps render the blood plasma actually germicidal, but this method is seldom practicable or convenient, and he would not recommend it excepting in emergencies like pyemia or septicemia. The hypodermic method is applicable, though it may produce some discomfort. But the most convenient and pleasant, though not quite so efficient a method is, as he suggests, in a solution of olive oil. He thinks that with prolonged administration the medicine will produce no unfavorable effects and is, therefore, a practicable method of blood antisepsis, pre-eminently in tuberculosis. It is also useful in typhoid, in pneumonia, in malaria as a substitute for quinin, in diphtheria together with antitoxin, in erysipelas by local injection, and in cerebrospinal meningitis, pyemia, septicemia and general septic infection.

115.—This article has appeared elsewhere. See abstract in THE JOURNAL of August 24, ¶40, p. 531.

117.—See abstract in THE JOURNAL of September 28, p. 854.

128. **Ligature of the Innominate Artery.**—Curtis gives a report of cases in which he employed a modification of Milton's method of exposing the anterior mediastinum by splitting the manubrium only instead of the whole of the sternum, and then dividing the bone transversely at the lower border of the first intercostal space. He gives the steps of it in detail, for which the reader is referred to the original.

130. **Foreign Bodies in the Abdomen.**—Schachner has investigated the subject of foreign bodies left in the abdomen and discusses the subject in its pathology and medicolegal relations. He reproduces the account of Kosinski's case where artery clamps were left in the abdominal cavity after laparotomy, from which a lawsuit resulted, ending, however, in

the acquittal of the surgeon from the charge of malpractice. He corresponded with surgeons throughout the country and reproduces in his article answers to a number of his queries which show how frequently such accidents may occur. He also mentions the recent Baldwin case in Ohio, where we believe suit is still pending against the hospital, though the surgeon has been acquitted.

132. **Pneumococcus Arthritis.**—Allen and Lull report a case of pneumococcus arthritis involving the knee-joint and also three cases that have been collected by Cave in which the pneumococci were obtained in pure culture as in his own case. Local infection with pneumococci apparently judging from these cases, three of which were fatal, is a very dangerous condition, and he thinks that possibly it may be a more frequent infection than has been supposed.

152.—See abstract in THE JOURNAL of September 14, p. 714.

153. **Surgical Tuberculosis.**—Thistle pleads for medical treatment in the proper toning-up of cases of surgical tuberculosis and believes creosote by far the most useful of the therapeutic agents at our command. In 10 cases he has had marked results by not neglecting this. He does not see any reason why patients with local tuberculous disease of the bones should be barred from receiving medical as well as surgical treatment, and he reports a case of tubercular disease of the elbow treated by splints, tonics and creosote with good results.

154. **The Systematic Doctor.**—This article which, as it has no author's name attached, seems to be an editorial, points out certain things which it thinks would aid the practitioner in various ways. For instance, keeping better records, and system of tabulating facts and cases, putting down charges correctly and on time. It suggests the card-index system as a valuable aid, and holds the doctors miss it badly by their slouchy methods in presenting accounts. The monthly statement would be a better plan, but it is unusual to find a doctor who sends one out. It is a good plan to keep a dead-beat list, and the establishment and observance of regular office hours will be found advantageous even for the cross-roads doctor, who will save hundreds of miles of travel and make many extra dollars. The careful examination and study of cases, notes taken at the time and industry, are what lead to success. Whenever there is any important lapse in memory look it up again. Keep one's self fresh as to the facts of anatomy and physiology and other branches of medicine by study of references of this kind. The card-index can be used to advantage in this connection.

157. **Ureter Catheterism.**—Various methods of separating the urine from the kidneys are criticised by Lewis, who finds all the previously devised instruments for ureteral catheterization unsatisfactory and the Harris segregator objectionable, as it produces in many cases unbearable pain and is erratic and unreliable. He describes and offers to the profession a cystoscope of his own device, which he thinks has advantages over any previous one, both in its actual use and in its facilities for sterilization. Besides its value in catheterization he found it also of value in cystoscopic examination of the bladder.

159. **Syphilis.**—O'Donovan questions the method of waiting for the secondary symptoms before beginning active treatment. He thinks syphilis can be best treated as soon as it can be diagnosed, and that if this plan were followed the later nervous complications which are now becoming so common would not occur.

166.—This article has appeared elsewhere. See THE JOURNAL of July 20, ¶117, p. 224.

167. **Syphilis.**—After noticing the different characteristics of syphilis, Wolff holds that the factors which influence its severity reside both in the seed and soil, but vary in type with the nature of the soil and the quality of the virus. The nature of the soil depends on the physical condition of the infected, his health, race, age and sex. The quality of the virus depends on the dilution from frequent transmission and attenuation by mercurial treatment continuously or intermittently carried out along the links of the antecedent chain. Attenuated virus in healthy soil means abortive or benign syphilis, while with the possible exception of racial immunity or resistance, depraved soil and unmodified virus means severe or malignant syphilis. He notices that with the pure-blooded negro syphilis is very mild and is almost self-limiting, and later lesions of bone and viscera are rarely ever seen, while in the mixed blood or mulatto the ravages of the disease are very great, not only on the surface but in the internal organs. This he thinks is largely due to inherited resistance in the negro, which is less in the hybrid, the environment of each being the same.

168. **Ridge Fever.**—This form of continued fever or ridge fever, which has been described as peculiar to parts of South Carolina, is held by Moore to be a form of typhoid. Quinin seems to have little effect on it; he therefore thinks it can not be a malarial disease.

FOREIGN.

British Medical Journal, October 12.

Chronic Diseases of Joints Commonly Called Chronic Rheumatism, Osteo-Arthritis, and Rheumatic Gout. ARCHIBALD E. GARROD.—Garrod discusses here the real relations of rheumatoid arthritis and describes its symptoms. He thinks there are two well-defined groups. One is characterized by the frequent implication of the small joints of the hand and feet and by the symmetrical distribution of lesions, and the conspicuous degree of secondary muscular atrophy. The large joints suffer as well as the small, and those of the spinal column and the temporo-maxillary articulations are implicated in a large proportion of the cases. The hands and wrists are often the parts earliest attacked. In the fingers the first row of the interphalangeal joints usually suffers most, and the terminal joints usually escape. Arthritic muscular atrophy is early seen. The onset of the disease is apt to follow the action of debilitating causes, and of late years especially influenza. Its progress may be slow or rapid. This may be arrested at an early stage and a large degree of recovery may ensue, or it may advance until every joint in the body has become involved. The general health is liable to be impaired to various extents by anemia, etc. Visceral lesions are rare, but albuminuria is occasional. The softer structures of the joints seem to be chiefly involved. Our knowledge of the morbid anatomy is very scanty and it has so little fatal tendencies that the opportunity of examining the joints in the early stages are very rare. We can have no more valuable contribution to this discussion than a careful description of the postmortem appearances in an early stage of this kind of rheumatoid arthritis. It is most frequent in female patients in early or middle life and less frequent in men of the same ages. There is a form of disease met with in children with very similar articular lesions and a fatal result is not rare. In the second group of cases the sufferers are mostly female. With these the articular lesions tend to be symmetrical, and the small joints are usually early attacked; the patients are usually more advanced in life, and there are well-marked differences in the articular lesions. The terminal joints in the fingers are here very liable to be attacked, and especially the carpo-metacarpal joint of the thumb. Constitutional disturbance is practically absent; pain is often slight. The progress of the disease is usually slow; many joints become involved. The enlargement is evidently due to bony outgrowth. Fusiform swelling is entirely wanting. Muscular atrophy occurs, but it is usually less capricious than in the other type. The postmortem appearances of the affected joints conform closely to the classical description of the osteo-arthritic changes. It may occur in early life, but it is more characteristic of advanced age. There are still other complications, but he thinks these two are the most distinct, and the question arises whether they represent two distinct diseases and whether we should not use the term rheumatoid arthritis for the former and osteo-arthritis for the latter. The question also arises whether there is no direct relationship of acute rheumatism and gout to these cases, but he is inclined to favor the idea that this rheumatoid arthritis had its characteristic features from the beginning, though it is not easy to assert

that true rheumatism plays no part at all in its causation. Endocardial lesions have been reported as occurring in a large proportion, but he thinks it is not an event to be anticipated. As far as bacteriologic evidence goes it would point rather to rheumatism being a distinct condition. If there is a relationship with gout it is with the nodular and osteoplastic form, but in the majority of cases no evidence is forthcoming of a gouty origin of the changes in the question. There is some support to the infective theory of the disease, but it is not satisfactory. The main principles to be followed in the treatment are to find out whether there is a debilitating influence present and to relieve it; any unhealthy condition of the mouth and gums should be looked for, as it has been held by some that infection from unhealthy gums plays an important part in the causation of disease. The diet should be as nutritious as possible and meat should not be cut off. Stimulants are in some cases beneficial rather than otherwise when taken in suitable form and quantity. We should try to keep up the patient's strength, and maintain as high a level of general well-being as the condition admits. On the same principle it is desirable to give tonic drugs, cod-liver oil, iron and arsenic provided they do not upset the digestion. Fresh air and such exercise as can be taken without injury to the joints are beneficial, but he thinks massage and passive movements of the joints often do more harm than good. As regards balneotherapy, he thinks that the douche-massage of the kind given at Aix-les-Bains and many English watering places, is preferred to other modes of administration, and especially to deep-immersion baths. In most cases the disease is arrested under treatment and fresh joints are not involved, and if the condition has not already done too much damage to the articular structures, something nearly approaching complete recovery can sometimes be attained. In the discussion that followed, Dr. E. J. Cave rather favored the microbic origin of the condition and reported cases which seemed to him to indicate this. He thinks, however, it is safer to hold one's opinion in suspense.

Peripheral Neuritis in Beer Drinkers; Its Precise Causation and Diagnosis. ERNEST SEPTIMUS REYNOLDS.—Reynolds describes the neuritis described in beer drinkers, which has been so prominently before the medical profession of late, and raises the question whether alcohol neuritis may not be due to arsenic, as was proven to be the case in the Manchester epidemic. There is the possibility, of course, that both may produce a neuritis and that the two poisons act in combination, but he believes ethyl alcohol alone never has done it when given experimentally to animals. He can not bring himself to believe that every case of alcoholic neuritis recorded has only been caused by arsenic, but thinks large numbers have been due to the combined action of the two poisons, and that arsenic in an alcoholic subject is much more virulent as a producer of neuritis than when taken alone. He suggests also that beri-beri has been diagnosed for states really due to arsenical poisoning.

New Methods and Results in the Bacteriologic Investigation of Fetid and Gangrenous Suppuration. EDWARD KIST.—The author describes his own method of bacteriologic analysis of pus, especially for anaërobic germs. It is that of Pasteur. The pus is diluted in several tubes containing to a height of about 4.5 in. liquid sugared agar, which is afterwards allowed to get rapidly solid, by plunging the tubes into cold water. The upper part of the agar column only can absorb oxygen, while the deeper layers are totally deprived of it. The tubes are put into an incubator and the colonies of anaërobic germs appear in the depths of the agar, where they can be withdrawn by means of aspiration through a clay pipette, without destroying the tubes and without preventing the later growing colonies from appearing in their time. Pure cultures of each germ are easily obtained by this system, and each species, once isolated, can afterwards be inoculated on various liquid and solid media. This method avoids the use of the air-pump, of hydrogen or pyrogallic acid, and enables the bacteriologist to make in a very short time a great number of dilutions, which is, of course, absolutely impossible with the other methods. He has studied and described several species of anaërobic germs which seem to play a very important part in human pathology; bacilli racemosus and bacillus fragilis seem to be the most active agents in appendicitis and pulmonary gangrene. These are also found in putrid pleurisy and otitic infections, together with staphylococcus parvulus and micrococcus fetidus. There are other species, however, described by him and his co-workers, and one of the most interesting is a certain bacillus bifidus found by Tissier in infants' intestines, where it has been taken for bacterium coli commune, and which it seems ought to be considered the normal microbe of the infantile intestine. Sometimes there are only anaërobic germs in the pus, sometimes they are mixed, but the author's researches entitle him to the view that whenever there is a fetid suppuration or an active gangrenous process, anaërobic germs are at the bottom of it. He thinks the presence of such germs in pus points to a severe form of infection, whereas the spontaneously curable forms are generally caused by the ordinary well-known pyogenic cocci.

Treatment of Phthisis by Electric Currents of High Frequency and High Potential. CHISHOLM WILLIAMS.—The treatment of pulmonary tuberculosis by high frequency electric currents has, as Williams claims, given very striking results. In 43 cases, all of them over a year's duration and picked by other medical men for the severity of their symptoms, 42 gained in weight and loss of all symptoms, except in a few where slight cough remains and a few bacilli may be found occasionally. The method is described. The Tesla method differs from the ordinary dynamo of the different coil currents in the indefinite alternations and high electromotive force. In the first, or auto-conduction method of the author, the patient is placed in a large solenoid and currents are induced in the living body, from which sparks may be drawn, though this is not needed in actual practice, but just for demonstration. He found that general electrification was better than local and the methods of treatment are of three kinds: 1. Auto-conduction; 2, Auto-condensation, in which the patient lies on a couch in or under which is a large sheet of metal that forms one armature of a condensor, and the patient, by means of suitable handles, the other. In this way currents of from 300 to 400 milliamperes may be safely passed through the body. The third method is by the resonator of Oudin; a solenoid, one end of which termintes in a metal sphere or other shaped terminal, and the other end terminates in the outer coats of the jars connected to secondary terminals of coil. From this can be drawn a long brush discharge similar to the static breeze, but absolutely painless, and of far greater power and intensity. This method can also be used locally. He describes the various symptoms as observed under this treatment. There is a vast increase in the number of bacilli, though a later decrease, and they tend to become clumped and become irregular and small, staining with extreme difficulty. The breathing, pulse, etc., are rapidly affected. In the first month he gives the application sometimes daily, in the second every other day, and in the third twice a week. In several of his cases ordinary occupation was resumed after the first month or so of treatment.

Diagnostic Value of Tubercle Bacilli in Relation to Phthisis. D. J. A. CHOWRY-MUTHU.—A summary of the author's conclusions are as follows: "1. The presence of tubercle bacilli in the sputum proves conclusively the existence of pulmonary tuberculosis. 2. There are other agents beside tubercle bacilli that cause destructive diseases of the lungs, producing symptoms similar to those of tuberculosis. 3. The absence of bacilli in a case of pulmonary disease does not prove the absence of tuberculous disease. 4. It may be due (*a*) to simple phthisis; (*b*) to faulty methods in the examination of sputum; (*c*) to very early tuberculosis of the lung; (*d*) to very late tuberculosis where signs of fibrosis are evident. 5. A correct diagnosis becomes extremely difficult where bacilli can not be found on several examinations, in which case the history, physical signs, and symptoms should be more relied upon than the negative evidence. 6. In all cases of pulmonary diseases a systematic examination of the sputum is of utmost

importance both for negative and positive evidence of bacilli.

Treatment of Chronic Bronchitis in the Elderly and Aged. HARRY CAMPBELL.—The three points of Campbell's article are summed up by him as follows: "In treating chronic bronchitis in those past middle life the toxicity of the blood should be kept as low as possible. The air breathed should be pure and nasal breathing insisted on. The diet should be a bare sufficiency, and alcohol and malt indulged in sparingly, or not at all. Every ounce of superfluous fat should be got rid of. The general health should be maintained at the highest possible level. A vigorous circulation should be maintained. Every precaution should be taken against breathlessness. Breathing exercises should be resorted to in order (among other things) to preserve the mobility of the thorax."

The Lancet, October 12.

Present Treatment of Inoperable Cancer. ALFRED COOPER.—The various methods of treatment of inoperable cancer are reviewed by Cooper: Coley's serum, anti-cancerous serum, oöphorectomy, thyroid feeding, lymph gland extract recommended by Snow, the Roentgen rays, Finsen's light treatment, injection of various irritating substances, acetic acid, alcohol, methyl violet, cobra venom, artificially produced suppuration as by turpentine or arsenious acid, or calcium carbid recommended by Etheridge, and electricity. Among the drugs he speaks in most favor of is chelidonium as having the most evidence of its efficiency. As a result of his review he offers the following conclusions: "1. That in cases of inoperable sarcoma, more especially the spindle-cell variety, the patient should have the option of Coley's fluid given to him, since a certain number of cases have been cured. 2. That in cases of inoperable cancer of the breast in women of about 40 years of age in whom the menopause has not occurred the operation of oöphorectomy should be proposed, and this treatment may be combined with thyroid feeding. 3. That in cases of inoperable rodent ulcer and in the superficial malignant ulceration in other parts the Roentgen rays give a good hope of improvement. 4. That in cases where these other methods are declined or are inapplicable the internal administration of celandine (chelidonium) is worthy of trial, and when the case appears quite hopeless morphia should be pushed without hesitation. 5. Finally, I would suggest that before trying any of these remedies the risk should be fully pointed out to the patient, that the faint hope that most of them afford should not be magnified, and that the discomfort of treatment should be fully discussed; in fact, the surgeon should not do more than offer the treatment and leave the person to accept or receive it."

Mucin in Desiccation, Irritation and Ulceration of Mucous Membranes. W. STUART-LOW.—The anatomy of the mucous coats and the physiology of their secretions are first noted by the author, who gives notes of his cases treated by the use of mucin. He uses tabloids containing 5 grains of mucin and sodium bicarbonate. The cases reported are those of irritable indigestion, which he ascribes to a desiccated condition of the mucous coats. He thinks that the substance acts by supplying the protective, indifferent non-peptonizable and hygroscopic substance, mucus, by administering it just before digestion begins. The sensitive ulcer or erosion or the inflamed wall is covered over or shielded from operation of the acid gastric juice and thus reflex secretion of the latter is prevented. One of the leading clinical indications for the administration of mucin tabloids, as prepared by Burroughs, Welcome & Co., is the presence of clean, red, angry, dry tongue, or a clean, red furrowed tongue, indicating the inefficiency of gastric or protective covering. If in association with this there is pain after feeding and constipation, it indicates not too much mucus in the stomach, as in catarrhal states, but really shortage of mucus; it is well to remove the old gastric mucus and prepare the way for mucin, to administer first a saline aperient. He carefully avoids peptonized foods or preparations in such cases as being unphysiological. For the first one-half hour and probably longer the acid gastric juice ought to be immediately neutralized as it is secreted by means of alkaline salts introduced in the food chiefly by uniting with the proteids of the meal; this is essential so that the amylolytic process may proceed. It is of supreme importance that such neutralization should take place in all irritable and ulcerative states unless the exposed and hypersensitive parts are to be worried by the free acid causing pain and inducing vomiting. Therefore, the administration of such prepared foods has been avoided. He finds that as soon as the patient can retain such a proteid as the essence of beef or fresh meat juice the pain becomes much less, and he relegates the use of such prepared foods to cases of worn-out stomach in the aged.

Cancer, Its Nature and Its Treatment. JOHN HOLDEN WEBB.—The author gives in substance a similar article which has been noticed editorially in THE JOURNAL and which was first published in the *Australasian Medical Gazette;* the view was there stated that the malignancy is a riotous cell growth due to the lack of inhibiting substance provided by the liver. He regards it as a crystallization of cholesterin from the living cell. In carcinoma both tissue elements, cells and follicles, are represented so that the thyroid secretion is imperatively indicated, and he believes that the sole action of this body is to control proliferation of cells and that its action on metabolism is a snare and a delusion. His champion case is one of advanced cancer of the mouth in which the tongue, lower jaw, palate and tonsil had been removed, and where the action of the soap injections was most marked. The whole of the interior of the mouth and cheek when first seen was one mass of cancer. All smell and discharge are now gone and the patient has no pain. He does not expect recovery, but it is wonderful that he should get along as well as he does. He suggests certain precautions. No more than one teaspoonful of soap solution should be administered at one time. These injections are not absolutely without danger; another precaution is to never inject in one's office unless there is a bed for the patient to lie down for an hour or two afterwards. It is always well, he thinks, to employ anesthesia, nitrous oxid for instance. At first he injects nearly every day, and, with improvement, less frequently until one every week or ten days suffices. While he recommends a special soap, the common yellow bar soap will do. It should be dissolved in boiling distilled water and then drained through a sieve or closely woven calico to get rid of any particles of dirt.

Annales des Mal. des Org. Gen.-Urin. (Paris), August.

Special Points in Treatment of Prostatism. F. P. GUIARD.—Among the points emphasized by Guiard are the benefits of small anodyne, rectal injections of antipyrin and laudanum in case of inflammation of the prostate. The most convenient method of making these injections is to insert a vaselined urethral catheter in the rectum, injecting the fluid through this catheter with a small glass syringe held in the lap. In order to prevent the formation of secondary calculi the sand accumulating should be aspirated once a month with a large metallic catheter. He also advocates a whalebone instead of a metal guide for urethral catheters, and the Trendelenburg position for lithotrity.

Bulletin de l'Academie de Med. (Paris), October 1.

Localization of Antimony in the Organism. G. POUCHET.—A recent criminal case of poisoning with antimony interested Pouchet in the subject, and he instituted a series of experiments on dogs and rabbits. The results seem to demonstrate that the toxic action of antimony is not manifested in comparison with arsenic, unless the dose is large, and that its localization is very different from the latter, while the combination of arsenic and antimony seems to enhance the toxic action of the former. Arsenic is refound in the brain, spinal cord, muscles and liver, but no antimony can be discovered in these organs. Traces of both metals are found in the bones, skin and hair, but the largest proportion of antimony is found in the alimentary canal, with a very small proportion of arsenic. The simultaneous administration of some other medicinal substance, such as potassium bromid, seems to modify to a remarkable extent both the symptoms and the localization of these poisons.

Revue Neurologique (Paris), September 15.

Effect of Sunstroke on the Brain. E. REGIS.—The effect of a sunstroke is similar in many cases to that of an intoxication. The direct or indirect action of the heat or the autointoxication which it may induce, are liable to cause the symptoms of an acute or chronic intoxication. In a case described, the patient had acute delirium immediately after a second sunstroke. After three months the memory was defective and improvement was very slow and gradual, owing to mental and physical torpor which persisted even a year later. Hypnotic treatment was refused.

Semaine Medicale (Paris), October 2.

Abnormal Position of the Intestines. F. DE QUERVAIN.—The intestines may be generally in a normal position with a certain portion more or less irregularly situated, or the entire large intestine may be behind, or to the left or right of its normal place. In a case personally observed, the entire large intestine was in the right half of the abdomen, the third case of the kind on record. Retroposition and sinistroposition with their intermediate degrees are probably due to arrested development, dating from the fifth week of fetal life. The other anomalies are probably the result of some abnormal torsion of the umbilical loop at this early stage. The abnormal position of the intestines may bring the appendix into the small pelvis, on a level with the iliac crest, over the right kidney, or near the margin of the liver, and perforation may occur at any of these points. The inflammation of the appendix at these abnormal points may be mistaken for an affection of the gall-bladder, but mistakes of this kind would be avoided if the course of the cecum were more carefully traced. The transverse colon may extend upward and completely mask the liver dulness. Manteuffel has collected 24 cases, including 4 personally observed, of torsion of the cecum in which the tumor was not in the ileocecal region. Of this number 13 patients who were not operated on and 2 with an artificial anus, all died, but 6 recovered out of the 9 treated by laparotomy. In case of torsion of an abnormal sigmoid flexure the loop is generally voluminous and fills the larger portion of the abdominal cavity, either toward the left or right. Both the small and large intestine may become twisted around a common mesentery. The symptoms commence very abruptly in these cases, and collapse is so rapid that surgical intervention has hitherto failed to prevent the fatal termination.

Berliner Klin. Wochenschrift, September 16.

Soluble Silver as an Internal Antiseptic. CREDE.—Soluble colloid silver is not an ideal solution, Credé admits, but no particles of silver are visible and it filters through blotting paper. It is tasteless, odorless and absolutely unirritating, while it proves extremely bactericidal even for very virulent staphylococci, as a destructive silver salt is formed from it by the action of the bacteria. Credé does not claim the priority of its invention, as he states that an American chemist exhibited argentum colloidale long ago as a scientific curiosity. He reports that three years of experience have confirmed his previous assertions in regard to its efficacy for external application, and its great value in country practice where asepsis is difficult. He is convinced that mercury and iodoform are responsible for many chronic, insidious, unrecognized intoxications, while silver is absolutely harmless. He recommends it now as a means of general internal disinfection in all streptococcus and staphylococcus infections not too far advanced. Abscesses and necrosis are, of course, not influenced by the silver, but phlegmons and all septic processes, epidemic cerebrospinal meningitis and erysipelas are favorably influenced. It has no action in subcutaneous injections and very little by the mouth. It must, therefore, be used in inunctions or by intravenous injection. He uses a 15 per cent. salve of the colloid silver, rubbing two or three grams into the skin after preliminary scrubbing and friction to induce hyperemia, and final rinsing with ether. When the skin is anemic, leathery, painful or incapable of absorption from any cause, intravenous injections take the place of the inunctions, from 5 to 20 c.c. of a .5 to 1 per cent. solution, repeating in one to eight days as required. He has treated cases of sepsis, acute rheumatism, fulminating gangrene, typhoid fever, scarlet fever with septic complications and advanced stages of pulmonary tuberculosis with the silver in inunctions or intravenous injections. All were exceptionally severe cases, but the marked benefit derived from the silver was apparent in every instance. Experiments on horses and other animals showed that the silver settled first in the lungs and liver and then left these organs for the spleen, kidneys and walls of the intestines. After a few weeks not a trace of the silver could be discovered in the organism. As it thus passes through the body so rapidly, its bactericidal effect is transient and the inunction has to be repeated three or four times a day and the intravenous injections twice, in order to obtain the maximal effect. Uncomplicated scarlet fever was not influenced by the silver. In case of infectious gastro-intestinal affections, he gives the colloid silver in pills or adds a teaspoonful to milk, cocoa or any albuminoid food three to six times a day.

September 23.

Prophylaxis of Tuberculosis and Isolation of Consumptives. B. FRAENKEL.—In order to prevent infection of others, Fraenkel has long advocated that consumptives should wear masks to catch the droplets expelled in speaking or coughing. He now concedes that the prejudice against such a measure as the constant wearing of a mask is practically insuperable, and yet healthy guinea-pigs placed in a model tuberculosis ward where every precaution against the dissemination of the infection—except masks—was scrupulously observed, the sputa immediately destroyed, etc., nearly all succumbed to tuberculosis in a short time. He cites other arguments to prove that the only means of effective prophylaxis against the spread of "the white plague," is the isolation of all persons affected with it. He estimates that each consumptive infects at least one other person during the course of his disease, and that if the sickness-insurance companies once realize this, they will find it to their interest and advantage to take measures to isolate their consumptive policy-holders. The law now allows them the privilege of supporting their proteges in an institution instead of paying a cash indemnity, and the Berliner Versicherungsanstalt has already commenced the construction of an establishment of this kind for lung diseases too far advanced for admission to a sanitarium. The immense number of these incurables is the chief obstacle to their effective isolation, but if it could once be definitely accomplished the number would grow progressively less after the first few years, instead of the ever-widening circles of infection which now prevail. He does not advocate compulsory isolation, but thinks that consumptives would be glad to take advantage of a home in some dust-free, attractively situated house or barracks with hospital accommodations for the bedridden, in place of the present dreary surroundings of the consumptive poor. He relates several instances showing the inevitable spread of infection from such a source, among them the case of a consumptive dismissed from the public hospital and refused admission to any sanitarium, living with her family in a basement communicating with a thronged tavern.

Inhalations of Oxygen. E. ARON.—After extensive study of the action of inhalation of oxygen as a therapeutic measure, Aron announces his conviction that it is comparatively useless except in carbon dioxid or anilin intoxication, or in disturbances due to rarefaction of air.

Mechanical Reduction of the Hump in Pott's Disease. J. JOSEPH.—The examination of an anatomic specimen and radiography of a clinical case have established the fact, Joseph announces, that it is possible to reduce the hump and ensure permanent correction. But the mechanism is different from what is generally assumed. The entire spine becomes shorter, the weight above pushes down the diseased portion which settles down in a vertical position, and enough new bone tissue and adhesions form to maintain the spine in its vertical position. He applies a cast and corset which ensure continuous mechanical pressure on the hump, combined with extension, thus favoring the production of adhesions and new bone tissue that

are able to support the spine in its normal position and amply suffice to compensate the defect after the spine has settled down under the weight above.

Deutsche Med. Wochenschrift, October 10.

The Portal of Entry for Tubercle Bacilli and Their Localization in Man. P. GRAWITZ.—The histological difference between the tubercles in human and in bovine tuberculosis might be explained by the racial differences in the reaction of the tissues. For example, the literature on actinomycosis shows that these microbes cause suppuration in man, while in animals they induce the formation of a tumor. Only one case is on record of an actinomycotic tumor in a human brain. Besides this racial predisposition to a given kind of reaction, there is an individual predisposition which varies with the age, food and manner of life. An example of this varying individual reaction is afforded by Busse's experiments on rats. Inoculated with a certain fungus derived from man, none of the animals showed any signs of infection until the females littered and nursed their young. At this time they commenced to grow thin and numerous foci were found in them, while the male animals remained healthy. The puerperium, measles, influenza, typhoid fever and diabetes frequently cause a temporary predisposition to tuberculosis. The debilitated tissues are unable to resist the encroachments of the bacilli and to throw up a wall of granulations around them. A slight injury of the finger in a diabetic may lead to extensive gangrene instead of mere suppuration with a demarcation of granulations as in a healthy subject. In anemic, debilitated children, some slight injury of the mouth or lip may allow the bacteria or cocci to enter, and as they proliferate in the tissues, their ptomains may induce local necrosis or noma to which the tissues oppose no obstacle. The influence of this individual permanent or temporary predisposition is so decisive that Grawitz considers it idle to dream of the final extinction of tuberculosis by the gradual extermination of the bacilli. The predisposition is the main disease, as, for instance, in the case of a diabetic, the diabetes. The tuberculosis is the accident, the same as the carbuncle or symmetrical gangrene in the latter case. Besides the racial and the individual predisposition, there is a predisposition of the organs. Grawitz and Menne have observed forty-two cases of tuberculosis of the internal genitalia in virgins. In a certain number of the cases infection probably occurred from the peritoneum, but in a large proportion, it was explainable only by transmission of infection by way of the blood or lymph. There was no anatomic difference between the lesions by these routes. The epididymis, the apices of the lungs, etc., are favorite nesting-places for the bacilli arriving by way of the blood, and the infrequency of tubercular lesions of the larynx and trachea seems to indicate that tuberculosis of the air passages is not necessarily always due to the inhalation of germs. The frequency of tuberculosis of the intestines has been accepted as proof that the germs must have been ingested in the food. But the rarity of cases in which the intestines alone are infected, shows that only a very small percentage can properly be attributed to this source. Intestinal tuberculosis is accompanied by pulmonary lesions far more frequently than tubercular joint affections or spondylitis. Consequently it appears that only an extremely small proportion of the fatal cases of tuberculosis can be ascribed to infection by way of the food, and when the cases of infection from diseased meat or the swallowing of germs from the air, are subtracted from the total number, scarcely any cases are left that can be attributed to the ingestion of milk from tuberculous cows. More than 25 per cent. of the last series of cadavers at the Griefswald pathological institute, exhibited evidences of tubercular infection at some time. Of the total number, only three children and one man had tubercles in the intestines or mesenteric tabes, without some focus in the lung whence they could have been derived. The intestinal mucosa is not a favorite point for the bacilli to settle. It often remains intact even when the mesenteric glands are severely infected and when for years sputa abounding in bacilli have been habitually swallowed. On the other hand, the bacilli seem to have a special predilection for the tonsils. Old caseous foci and fresh tubercles with giant cells and bacilli, are frequently encountered in the tonsils even when they are small and present a normal external aspect. From the tonsils, the bacilli can pass easily into the cervical lymphatic glands, and even in the absence of any apparent tumefaction of the glands, the bacilli can travel on to the hilus of the lung and thence invade the lung, pleura or pericardium. The child may die in consequence, without exhibiting the slightest indication in the intestines or mesenteric glands that the food was in reality the bearer of the primary infection. It is difficult to prove that the tubercle bacilli entered the follicles of the tonsils from the food, but the assumption is as plausible as for the caseous foci and tubercles in the lymph follicles of the intestines or mesenteric tabes. Further research in this line is necessary, especially to determine the order in which the organs are affected, with microscopic investigation of the tonsils in case of chronic, suspicious swelling of the cervical glands. The autopsy in the rare cases of pure tuberculosis of the intestines may afford evidence that the tubercle bacilli were swallowed in the food, but negative findings in case of general tuberculosis by no means exclude this possibility, even when the entire intestines and their lymphatic apparatus are found intact. The entire number of the *Wochenschrift* is devoted to Virchow, and this communication from Grawitz is also dedicated to "the great skeptic in pathology."

Proliferation of Neuroglia. V. BABES.—The latest research has only confirmed Virchow's assertions in regard to the nature of the neuroglia. They have been characterized as the divination of genius, as no previous research or work by others had led up to his conception of the neuroglia. The details of the finer structure, the fibers and the relations between the neuroglia, the vessels and the nerve elements, and its nutritional and secretory activity, have been later discoveries, but all sustain and supplement his early research.

Analysis of the Feces. H. URY.—Thorough extraction with water of fresh fecal matters from a healthy subject, allows the essential intestinal secretions to be preserved in the aqueous extract, while the remains of the food filter out as insoluble detritus. This method of procedure is not absolutely exact as it takes no account of the epithelium shed by the intestinal walls. But the quantity of this epithelial substance is very small in health and can be disregarded in practice. Among the interesting points learned by this method we note that Ury found that in typhoid fever, notwithstanding the copious diuresis, most of the alkaline salts are eliminated by the intestinal walls instead of by the kidneys as in normal conditions. He found also that an average of 1.6244 gm. of nitrogen was eliminated in the feces in twenty-four hours, on a mixed diet, of which .39 gm. passed into the aqueous extract. To determine the proportion of lime, he evaporated the filtrate over the water-bath, reduced the residuum to ashes and determined the lime in the latter. The quantity was always minimal and most of it was evidently derived from the food. About 26.2 per cent. of the total phosphorus in the feces passed into the aqueous extract; 89.6 per cent. of the combined phosphorus was eliminated in the urine and 10.1 per cent. in the aqueous extract. These latter proportions were so constant that they indicate a physiologic law.

Monatshefte f. Prakt. Dermatologie (Hamburg), July 1.

Treatment of Epididymitis. M. POROSZ.—Experiments on dogs have shown that the disturbances in the circulation in the epididymis are frequently of reflex origin. The organ, not the patient, requires rest. Hot applications should be scrupulously avoided as they increase the inflammation. Porosz recommends injections of a weak solution of subacetate of lead, and the application of a Falkson suspensory after anointing the scrotum with vaselin.

July 15.

Elective Double Stain for Plasma Cells. A. PAPPENHEIM.—If resorcin is added to the methyl green and pyronin stain, the latter is fixed by the substances to which it has a chemical affinity and washes out of the rest of the specimen.

The resorcin is applied in an alcoholic solution after staining for five minutes. This stains the specimen in four colors.

August 15.

Etiology of Eczema. E. BENDA.—In extensive experimental tests, inoculation of staphylococci, isolated or in cultures, invariably produced impetigo, while inoculation of the staphylococcus toxins, both with and without the cocci themselves, invariably induced eczema.

Monatschrift f. Ohrenheilkunde (Berlin), August.

Diagnostic Significance of Rhodan Reaction in Saliva in Case of Otitis. E. JUERGENS.—The saliva from the parotid gland normally contains considerable rhodan, but in case of disturbance in the innervation, accompanying an affection of the middle ear, tests for rhodan are negative. The rhodan test is, therefore, important for the diagnosis of an existing suppuration of the middle ear or other aural affection, although the test is less reliable in smokers.

Muenchener Med. Wochenschrift, October 1.

Significance of Elastic Fibers in Pathologic and Regenerative Processes. B. GROHE.—After a historical review of the various theories in regard to the significance of the elastic fibers, Grohe describes his experimental research on the subject. He fractured the radius or ulna in young rabbits, leaving the other bone as a natural splint. The elastic fibers were ruptured in the fracture and the young regenerated fibers penetrated the external callus and also the inner marrow callus. They usually develop where there is most need for solidity and a fastening of the parts. He found that the new fibers almost invariably proceed from the old, and remain in connection with them. In the bone marrow the only elements containing elastic fibers are the delicate vessels, and the regenerated fibers probably therefore proceed from the elastic fibers in the vessels.

A Case of Tumor-Like Hyperostosis of the Skull. A. SCHILLER.—About sixteen cases of diffuse hyperostosis of the skull have been published, but not more than a dozen cases of the tumor-like hyperostosis. In the case described, the ostosis had never caused brain trouble, and the fact that the excessive bone development ceased with the general growth, as well as its anatomic location, suggested that it was merely an excessive functioning of the physiologic centers of ossification of the skull. The prognosis in this case is probably favorable, although there is always a possibility that trauma or inflammatory fluxion, etc., may arouse the latent disposition to excessive bone-formation and induce further proliferation.

The Diplococcus Semilunaris as the Companion of Tuberculosis. E. KLEBS.—The frequent association of the semilunar diplococcus with the tubercle bacillus explains, perhaps, the inefficacy of specific treatment directed against the latter. It frequently flourishes after the tubercle bacillus has finished its career, especially in tubercular joint and bone affections. When these diplococci are numerous, the prognosis is less favorable as the fact indicates lesser resisting power on the part of the tissues. In experiments on animals the diplococcus induced atrophy of the various organs, especially of the blood-producing, or phlegmonous inflammation. This power of the diplococcus to induce atrophy is very serious in a debilitated tuberculous subject, and may entail phthisis even when the tuberculous processes are almost entirely cured. The emaciation of an old self-immunized phthisic may possibly be due to this mixed infection with the semilunar diplococcus.

A Case of Pseudo-Leukemia and Glycosuria. A. GOLDSCHMIDT.—The protracted course of this case of pseudo-leukemia was probably due to the nourishing food and care and rest which the patient was able to procure. An intermittent glycosuria was a prominent feature of the case, accompanied by occasional irregular fever. The glycosuria was not influenced by the food and toward the last vanished completely. Lactophenin seemed to be the most effective remedy to control the fever and nervous disturbances. Arsenic was not tolerated by the patient after the first.

October 8.

Transfusion of Saline Solution in Experimental Tetanus. C. TONZIG.—Moschowitz has recently published statistics which demonstrate that the mortality of tetanus has fallen from 90 to 40 per cent. since the introduction of antitetanus serum, and that Tizzoni's is proving the most effective. Bacelli's method of subcutaneous injection of an aqueous solution of carbolic acid is not fulfilling the anticipations it first aroused. Saline transfusion has proved successful in the experience of some physicians and theoretically is indicated in tetanus. Gomez reports the cure of a severe case in a boy of 7 by subcutaneous injection of 250 gm. a day of a .75 per cent. saline solution. Lasletta has found saline transfusion extremely effective in diphtheria at a time when antitoxin treatment had lost its efficacy. Others have reported fine results from rectal injections of saline solution in typhoid fever and tetanus, with or without supplementary drawing of blood by leeches. Tonzig reports the results of ten series of experiments on large numbers of rabbits. The results failed to demonstrate any absolutely favorable action from saline solution injected into the peritoneum. The tests proved that the tetanus toxin does not circulate in the blood, but evidently fastens on the cells. This lavage of the organism, however, postponed the fatal termination for several days, when the onset of the infection was not particularly stormy. It, therefore, has a certain value which should not be forgotten when for any cause antitoxin treatment is not practicable.

Statistics in Regard to the Diminishing Mortality from Tuberculosis. A. GOTTSTEIN.—By comparing the tabulated statistics of twenty-three Prussian cities, Gottstein finds that the mortality from tuberculosis has been steadily diminishing since 1876 so far as adults are concerned, but that in individuals under 20, the mortality remained high until 1894, when it began to diminish a little. This difference in the curves of tuberculosis in children and in adults is probably due to the different localization of the disease. The mortality is influenced by the progress in surgery, which has reduced the mortality in children from surgical tuberculosis. Since 1894 the infant mortality has been reduced to four-fifths of what it was in 1881, which is probably due to the improvement effected in the milk supply about that time.

Gazzetta Degli Ospedali (Milan), October 6.

Bubonic Plague. LUCATELLO.—The recent small outbreak of plague at Naples is the occasion of this historical and clinical review of the subject. Lucatello states that the antiplague serum made by Lustig at Florence has reduced the mortality to 46.15 per cent. in the cases in which it has been used, and that it has been tried on an extensive scale at Bombay.

Two Cases of Osteomalacia Treated by Castration. S. CATELLANI.—One patient, a woman of 29, was completely cured by the castration; the other was 39 years old, and the operation relieved her of all pain, but did not prevent a fatal termination seven months later. In the latter case a remarkable remission in the symptoms had been observed in the course of the disease, coinciding with suspension of the menses for six months. When menstruation returned, the osteomalacia resumed its progressive course. The pains permanently disappear in the first or second day after castration. The prolonged administration of phosphorus has cured certain patients and Morpurgo has succeeded in inducing in animals the production of localized alterations in the bones resembling those of human osteomalacia, by microbian lesions in the spine. These facts all tend to establish the close connection between the genital organs and nervous system and the osteomalacic processes.

Nordiskt Med. Arkiv (Stockholm), 1901, i, 2.

Primary Tuberculosis of the Intestines. V. GRIMSGAARD.—In the case described, the cachexia was caused by autointoxication and by the fatty degeneration of heart and liver, which induced edema, commencing nine months after the first signs of the intestinal trouble. The symptoms had been attributed to a gastric affection until the edema appeared, when the pain assumed more and more the character of colic pains and König's stricture syndrome was presented. The patient

was a married woman of 59, hitherto healthy. Operation was refused on account of the bilateral ascites and edema and the pronounced cachexia, although the patient was not emaciated. On her insistence, an ileo-colostomy was done, to exclude the portion of the small intestine containing the multiple strictures, but the heart was too much degenerated to allow her to rally from the operation. In the 114 cases of tuberculosis of the cecum which have been published, the symptoms indicating a stricture had persisted from six to twelve months in 15; from one to two years in 14; from two to three years in 20 and in one for nine years, for twelve in another, for several years in 3, and for four to eight years in 15. In the 69 cases in which these details are given, 60 per cent. of the patients were between 30 and 40, and only 7 were over 50 and one over 59. The age seems to have a certain influence on the course of the disease. In the first place, chronic nutritional disturbances are more liable to induce fatty degeneration of the heart in elderly than in young persons. Secondly, the characteristic symptoms of a stricture require a longer time for their gradual evolution in elderly persons. In all the case reports it is apparent that the attacks were infrequent at first, with long intervals between them, and that the disease was not recognized until they became more frequent. By this time the stricture is very narrow and compensatory hypertrophy has developed, but the nutritional disturbances and the resulting autointoxication have long been at work, months or years before the pains become violent. When the hypertrophy above the stricture is insignificant, meteorism may exist without the characteristic attacks of pain which are the result of the violent peristalsis of the central portion of the intestine. In the personal case reported, the attacks of colic in 1895 probably had been the first symptoms of the stricture which did not exhibit the unmistakable characteristic picture until five years later, when intervention was too late. The patient's age probably was the reason of the slow development of the compensating hypertrophy.

Simultaneous Extrauterine and Intrauterine Pregnancy. H. CHRISTER-NILSSON.—Pains in the abdomen, occasional scanty hemorrhage from the uterus and evening vomiting, were the only symptoms, but palpation disclosed a tumor on the right Fallopian tube and that the uterus was increasing in size. The patient was a healthy iii-para. A simultaneous extrauterine and intrauterine pregnancy was diagnosed and the tube and ovary were removed without disturbing the uterus. The patient rapidly recovered, but six weeks later the uterine pregnancy was terminated by an abortion following a severe fright. Sixty-seven cases of these simultaneous pregnancies in and outside of the uterus have been published. In Sale's case the laparotomy was done when both fetuses were at term and viable. The "ectoper" was extracted first, and then the normal fetus by Cesarean section. The mother died four days later, probably of sepsis. Only the extrauterine pregnancy had been diagnosed in this case. In Franklin's case, the normal fetus was extracted by Cesarean section and a dead fetus from Douglas' pouch. The mother died of hemorrhage from the ectopic placenta. Besides Sale, Wilson and Chrobak each delivered a viable "ectoper." Ten patients treated expectantly recovered. The fetus left in the abdomen was fully developed in some of these cases. Nineteen other cases of expectant treatment out of a total of 38, terminated fatally. Whitcomb treated a case by killing both of the fetuses at the third month by electricity. They were expelled later by the uterus and the mother recovered. All the patients recovered who came under treatment after the intrauterine pregnancy had been interrupted, with one exception. In Mathewson's case, according to the abstract in the *Cbl. f. Gyn.*, 1898, p. 1421, the fully developed extrauterine fetus was killed with a stiletto after successful delivery. In nine cases in which the pregnancy had lasted less than four months, the entire pregnant tube was ablated with recovery in all but one case. About 80 per cent. of the women had passed through one or more previous pregnancies in the 52 cases in which this detail was mentioned. In one patient it was the eighth pregnancy, in another the twelfth and in another the nineteenth. In only one of all the cases reported was the pregnancy confined to the ovary. The right tube is usually involved, but in three cases the ectopic pregnancy was interstitial.

1901, ii, 2.

Tuberculous Strictures of the Small Intestine. J. FIBIGER.—In two cases described in detail, the discovery of multiple strictures in the small intestines was an autopsy surprise. No symptoms had been recognized during life, and the lesions were almost completely healed. There were progressing tubercular lesions in the lungs. In one case the patient had passed through a supposed abdominal typhoid fever twenty-one years before, and for a few years afterward a tendency to diarrhea or constipation had been noted. Fibiger thinks that these symptoms were probably the manifestations of the tuberculous process at its height. In the other case, no symptoms of any kind had ever attracted attention to the intestines. Neither of the patients showed signs of anemia. The healing process had been so complete that all the characteristic alterations of the tissues and the bacilli had vanished except in a very few of the 342 sections of the intestines that had been mounted, which still showed signs of the tuberculous ulceration in the stricture. Repeated microscopic examination of the mesenteric glands was also necessary before the tuberculous nature of the adenitis could be established. Reach has collected 91 cases of multiple strictures of the intestines, and found that tuberculosis was the cause in 42, carcinoma in 6, syphilis in 12, dysentery in 1, typhoid fever in 1, and no cause could be assigned in 17. Fibiger is convinced that these multiple strictures have been sometimes erroneously attributed to syphilis in the past. He describes two typical cases, in which the proliferating, obliterating endophlebitis in the veins of the mesentery and the aspect of the strictures suggested a syphilitic origin, but extremely careful microscopic examination of the tissues established their tuberculous nature. He thinks we have no right to exclude a tuberculous origin, unless we obtain negative results from the combined microscopic investigation of the strictures and of the glands of the mesentery and liver. On the other hand, a syphilitic origin is evident in the few published cases of affections of the small intestine consisting in a fibrous, shrivelling process and tumor-like infiltrations on the intestinal wall, unmistakable cicatricial formations in gummatous nodules. The frequency of these tuberculous strictures in the intestine seems to be increasing, as Fibiger has observed seven cases in the last two years. As the tuberculous lesion heals, cicatricial stenosis follows and the healing generally accompanies a remission in the pulmonary process which, he remarks, almost inevitably coexists with the intestinal affection. As the pulmonary lesions heal, the general health improves and the constant irritation from swallowed sputa is abolished. If it is a fact that the frequency of these cicatricial stenoses is increasing, this may be explained by the greater prevalence of benign, fibrous forms of pulmonary tuberculosis, which Lange has noted for Copenhagen at least. Conrath has suggested that the tubercle bacilli derived from the food are different from the ordinary human bacilli and that the primary chronic hypertrophic tuberculosis of the cecum may be a different kind of a tuberculous lesion.

Bacteriology of Cerebrospinal Meningitis. I. JUNDELL.—In 387 cases of acute, primary meningitis, epidemic and sporadic, pure cultures of the meningococcus were derived in 249 cases, and of the pneumococcus in 106. In only 32 cases, or 8.3 per cent., were different results obtained.

Malignant Disease in Norway. M. GEIRSVOLD.—The statistics that have been collected in Norway since 1878 show that cancerous affections are increasing in frequency, and that certain localities seem to be peculiarly prone to cancer. It is more frequent in the cities. The occupation and station in life seem to have no influence whatever on the dissemination of cancer unless it reduces the average length of life below 60, the cancer-breeding age. In 79.6 per cent. of the 15,555 cases in which the location is specified, the cancer occurred in the alimentary canal, including about 4 per cent. in the mouth or

throat. This fact inevitably suggests some connection between the food and the development of cancer.

Oliguria. N. VEDELER.—Five elderly women have been treated by Vedeler for scantiness of urine. The trouble simulated a cystitis at first; the concentrated urine, the abundance of sediment and pains during and after micturition. But the absence of bacteria and pus from the urine and the rapid response to treatment showed that the affection was exclusively nervous, an actual decrease in the secretion. One patient was treated with Faradization of the kidney region, another with asafetida. There were no indications of retention nor of hysteria at any time.

Necessity for Small, Numerous Sanitariums for Tuberculous Subjects. M. HOLMBOE.—Besides the large sanatoria, Holmboe pleads for a small establishment in every community, where tuberculous subjects can be treated near home. For most of them four to six beds would be sufficient, and when more than twenty are required, another of these temporary homes should be equipped.

Respiratory Exercises in Pulmonary Tuberculosis. C. F. LARSEN.—Modern sanatorium treatment does not pay sufficient attention to the exercise which tuberculous patients require. The influence of the air on the lungs could be multiplied by systematic exercises in breathing, expelling the residual air by vigorous expiration. Inspiration can not be forced without danger, perhaps, but expiration should be vigorous. The best of all measures is to increase the respiration in general by systematic walks instead of so much reclining. Both circulation and respiration are stimulated by suitable exercise of this kind, graduated to each case.

Chorea and Rheumatism. S. LAACHE.—During the last seventeen years Laache has had occasion to observe 390 cases of acute rheumatism, and has traced them to date, but has been unable to discover a single case in which chorea appeared. He is inclined to define chorea as a "growth neurosis," an anomaly in development, although he admits an endocardo-rheumatic, infectious variety and a neurasthenic. Four of his forty patients with chorea died. In two the autopsy disclosed fatty degeneration of the kidneys, and in two endocarditis. He attributes great importance to fright, as a determining cause. School chorea is due to anemia and chlorosis fully as much as to mental strain. Pains in the joints were noticed in 18 per cent. A heart affection was evident in 42 per cent., but it was slight in all but 18 per cent. He considers arsenic the chief reliance in treatment, administered by the mouth or in the form of subcutaneous cacodylic injections. He has found potassium bromid the best and most harmless narcotic. (Originally published in the *Norsk. Mag. f. Lägevid.*, 1900, p. 97.)

Queries and Minor Notes.

INDIANA MEDICAL PRACTICE ACT.

TOLEDO, ILL., Oct. 18, 1901.

To the Editor:—To obtain a license from the Indiana State Board, is a graduate of the Medical College of Ohio, U. C., holding a certificate issued by Illinois State Board, required to pass an examination? If so, when and where will the next one be held?

B. C. R.

ANS.—Yes. The next regular meeting is to be held in Indianapolis, the second Tuesday in January.

OREGON AND WASHINGTON B. OF H. SECRETARIES.

CHICAGO, Oct. 23, 1901.

To the Editor:—Would you kindly state in the next issue of THE JOURNAL who the secretaries of the Boards of Health are of Washington and Oregon, and where they are located? A. H. G.

ANS.—Dr. Byron E. Miller, Portland, Ore.; Dr. J. P. Turney, Davenport, Wash.

New Patents.

683,589. Insufflator. Wm. F. Barry, Woonsocket, R. I.
683,680. Electro-massage device. Lee J. Chapman, Columbus, Ohio.
683,556. Eye-cap and lid-closer. Carl B. Dolge, Westport, Conn.
683,738. Apparatus for treating leg defects. Wendelin Enge, Hohentengen, Germany.
683,690. Apparatus for sterilizing disease-germs. Charles M Johnson, New York City.
683,774. Bandage rolling machine. Wm. D. Kilbourn, Pueblo, Colo.
683,564. Electric appliance for treatment of defective hearing. Wm. H. Loop, Cohoes, N. Y.
683,807. Sterilizer. Joseph Schoettl and C. Jaeger, Brooklyn, N. Y.
35,143. Design, hot-water bag closure. Christian W. Meinecke, Jersey City, N. J.
684,392. Hernial Truss. George W. Bell, Kansas City, Mo.
684,179. Spirometer. Paul von Boeckmann, Washington, D. C.
684,351. Electro-therapeutic instrument. Albert W. Courtney and J. S. Mead, Buffalo, N. Y.
684,199. Hernial truss. Charles Delorriers, Chicopee, Mass.
684,200. Abdominal supporter. Wm. B. Dewees, Salina, Kan.
684,218. Invalid bedstead. Michael D. Gavan, St. Louis, Mo.
684,225. Electro-medical device. George Graybill, York, Pa.
684,231. Aseptic or hygienic receptacle cover. James B. Hammond, Camden, Me.
684,263. Soda water tank. Wallace S. Judd, Cleveland, Ohio.
684,269. Electrical apparatus for body wear. Joseph Kornitzer, Socorro, N. M.
684,078. Breast pump. Wm. H. Martin, New York City.
684,085. Suppository. Daniel H. Murphy, Hartford, Conn.
683,991. Water-bag for the head. Stella Rowe, Cincinnati, Ohio.
683,994. Medicament applicator. Gustav Schirmer, Chicago.
684,131. Operating table. Albert Taubert and R. Kny, New York City.
684,326. Vacuum-electrode for therapeutic purposes. Reinhold H. Wappler, New York City.

Books Received

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

A CIVILIAN WAR HOSPITAL. Being an Account of the Work of the Portland Hospital, and of Experience of Wounds and Sickness in South Africa, 1900. With a Description of the Equipment, Cost and Management of a Civilian Base Hospital in Time of War. By the Professional Staff, Anthony A. Bowlby, C.M.G., F.R.C.S., Senior Surgeon; Howard H. Tooth, M.D., C.M.G., F.R.C.P.; Cuthbert Wallace, M.B., B.S., F.R.C.S.; John E. Calverley, M.B., B.S., M.R.C.S.; and Surgeon-Major Kilkelly, C.M.G., Grenadier Guards, Principal Medical Officer and in Military Charge. With Numerous Illustrations. Cloth. Pp. 341. Price, $4.00. New York: Longmans, Green & Co. 1901.

A TEXT-BOOK OF SURGERY. By Dr. Hermann Tillmans, Professor in the University of Leipsic. Translated from the Seventh German Edition by Benjamin T. Tilton, M.D., Instructor in Surgery, Cornell University, and John Rogers, M.D., Instructor in Surgery, Cornell University. Edited by Lewis A. Stimson, M.D., Professor of Surgery, Cornell University. Volume I. The Principles of Surgery and Surgical Pathology. With 516 Illustrations. Cloth. Pp. 841. Price, $5.00 per volume. New York: D. Appleton & Co. 1901.

MATERIA MEDICA, PHARMACY, PHARMACOLOGY AND THERAPEUTICS. By W. Hale White, M.D., F.R.C.P., Physician to and Lecturer on Medicine at Guy's Hospital, London. Edited by Reynold W. Wilcox, M.A., M.D., LL.D., Professor of Medicine and Therapeutics at the New York Post-Graduate Medical School. Fifth American Edition, Thoroughly Revised. Cloth. Pp. 744. Price, $3.00. Philadelphia: P. Blakiston's Son & Co. 1901.

THE PRINCIPLES AND PRACTICE OF MEDICINE. Designed for the Use of Practitioners and Students of Medicine. By William Osler, M.D., Fellow of the Royal Society. Fourth Edition. Cloth. Pp. 1182. Price, $5.50. New York: D. Appleton & Co. 1901.

A TREATISE ON MEDICAL JURISPRUDENCE. Based on Lectures Delivered at University College, London. By George Vivian Poore, M.D. (Lond.), F.R.C.P., Professor of the Principles and Practice of Medicine, University College, London. With Illustrations. Cloth. Pp. 533. Price, $4.00. New York: Longmans, Green & Co. 1901.

DISEASES OF THE UPPER RESPIRATORY TRACT, the Nose, Pharynx and Larynx. By P. Watson Williams, M.D. Lond., Physician in Charge of the Throat Department at the Bristol Royal Infirmary. Fourth Edition. Illustrated. Cloth. Pp. 436. Price, $6.00. London: Longmans, Green & Co. 1901.

THE TRANSACTIONS OF THE MEDICAL SOCIETY OF THE STATE OF CALIFORNIA. Thirty-first Annual Session, Sacramento, April, 1901. Vol. XXXI. Cloth. Pp. 419. Published by the Society.

REPORT OF THE COMMISSIONER OF EDUCATION for the Year 1899-1900. Volume I. Cloth. Pp. 1280. Washington: Government Printing Office. 1901.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., October 10 to 16, 1901, inclusive:

Arthur I. Boyer, contract surgeon, on being relieved from duty at Fort Lawton, Wash., will proceed to New York City, for annulment of contract.

William J. Calvert, lieutenant and asst.-surgeon, U. S. A., from the General Hospital, Washington Barracks, D. C., to Fort McHenry, Md., for post duty.

Clyde S. Ford, lieutenant and asst.-surgeon, U. S. A., leave of absence granted.

Robert J. Gibson, major and surgeon, U. S. A., on being relieved from duty at San Francisco, Cal. (see Ogden Rafferty below), will report for transportation to Manila, P. I., and subsequent assignment in the Division of the Philippines.

Evan P. Howell, lieutenant and asst.-surgeon, U. S. A., from Fort Duchesne, Utah, to duty at Fort Clark, Tex.

Frank R. Keefer, captain and asst.-surgeon, U. S. A., on being relieved by Captain Reynolds (see below), to rejoin his station at Fort Monroe, Va.

Henry S. Kierstedt, lieutenant and asst.-surgeon, U. S. A., now on duty in the field with Troop H, 5th Cavalry, is relieved from duty in the Division of the Philippines, and from temporary duty in the Department of California; on his return to the Presidio of San Francisco, Cal., from field duty he will proceed to Fort Lawton, Wash., to relieve Contract-Surgeon Arthur J. Boyer.

Louis A. La Garde, major and surgeon, U. S. A., detailed as lecturer on the results of gunshot injuries at the Army Medical School, Washington, D. C.

Ogden Rafferty, captain and asst.-surgeon, U. S. A., relieved from further duty in the Division of the Philippines, and will proceed to San Francisco, Cal., for duty as attending surgeon and medical superintendent of the Army Transport Service, relieving Major Robert J. Gibson, surgeon, U. S. A.

Henry I. Raymond, major and surgeon, U. S. A., on being relieved from duty in Chicago, Ill., will proceed to San Francisco, Cal., en route for assignment in the Division of the Philippines.

Thomas W. Raymond, major and surgeon, U. S. Vols. (captain and asst.-surgeon, U. S. A.), relieved from further duty in the Division of the Philippines, and will proceed to Chicago, Ill., for duty as attending surgeon and examiner of recruits.

Frederick P. Reynolds, captain and asst.-surgeon, U. S. A., is detailed a member of the board in Washington, D. C., to examine candidates for admission into the Medical Corps of the Army, to take effect Oct. 31, 1901, relieving Captain Frank R. Keefer, asst.-surgeon, U. S. A.

Lewis A. Thompson, contract surgeon, leave of absence extended on account of sickness.

Hobart E. Warren, contract surgeon, now on duty at Denver, Colo., will proceed to the General Hospital, Fort Bayard, N. M., for duty at that hospital.

M. Manley Waterhouse, contract surgeon, is relieved from further duty on the transport *Logan*, and from temporary duty at the General Hospital, Presidio of San Francisco, Cal., and will proceed to Fort Wadsworth, N. Y., for duty.

Samuel M. Waterhouse, lieutenant and asst.-surgeon, U. S. A., from Fort Meade, S. D., to San Francisco, Cal., en route to Manila, P. I., for assignment in the Division of the Philippines.

Charles E. Woodruff, major and surgeon, U. S. A., from Fort Riley, Kan., to San Francisco, Cal., en route to Manila, P. I., for assignment in the Division of the Philippines.

In addition to the above, the following order was published on Oct. 12, 1901:

By direction of the Acting Secretary of War, the following-named assistant surgeons, U. S. A., are relieved from temporary duty at the posts designated after their respective names, and will report in person, on Nov. 1, 1901, at the Army Medical Museum Building in Washington, D. C., to Colonel William H. Forwood, assistant surgeon-general, U. S. A., president of the faculty of the Army Medical School, for the course of instruction prescribed in paragraphs 542 and 543, Army Regulations, 1901: All are first lieutenants and asst.-surgeons, U. S. A.:

Jerome S. Chaffee, Columbus Barracks, Ohio.
Charles C. Greer, Fort McPherson, Ga.
Ernest L. Ruffner, Columbus Barracks, Ohio.
Eugene R. Whitmore, Fort Sheridan, Ill.
Conrad E. Koerper, Washington Barracks, D. C.
Robert U. Patterson, Fort McHenry, Md.
Roderick F. O'Connor, Fort Myer, Va.
George P. Heard, Fort McPherson, Ga.
Roger Brooke, Jr., Fort Myer, Va.
Arthur M. Line, Fort Sheridan, Ill.
Verge E. Sweazey, Fort Columbus, N. Y.
Matthew A. DeLaney, Fort Monroe, Va.
Horace D. Bloomberg, Plattsburg Barracks, N. Y.
Paul S. Halloran, Fort Wadsworth, N. Y.
Kent Nelson, Washington Barracks, D. C.
Robert Smart, Fort Monroe, Va.
Lloyd LeR. Krebs, Fort Leavenworth, Kan.
William P. Woodall, Fort Clark, Texas.
Herbert M. Smith, Fort Monroe, Va.

Navy Changes.

Changes in the Medical Corps of the Navy, week ending Oct. 19, 1901:

Asst.-Surgeon F. M. Furlong, ordered to the Naval Hospital, New York, for treatment.

Pharmacist I. N. Hurd, detached from the Boston Navy Yard and ordered to the *Wabash*.

Surgeon S. H. Griffith, order to report for duty as a member of medical examining boards modified, ordered to report as a member of the medical examining board only, and not as a member of board for examination of medical officers.

Dr. H. R. Webb, commissioned asst.-surgeon from Oct. 11, 1901.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service for the twenty-one days ended Oct. 17, 1901.

Surgeon H. W. Austin, granted leave of absence for one month from October 7.

P. A. Surgeon A. R. Thomas, to proceed to Naples, Italy, and report to P. A. Surgeon J. M. Eager for duty.

Asst.-Surgeon W. C. Billings, relieved from duty at Los Angeles, Cal., and directed to proceed to Chicago, and report to the medical officer in command for duty and assignment to quarters.

Asst.-Surgeon C. W. Wille, granted leave of absence for seven days from October 17.

Asst.-Surgeon B. S. Warren, granted two days' extension of leave of absence.

A. A. Surgeon J. C. Rodman, granted leave of absence for four days.

A. A. Surgeon H. H. Stearns, granted leave of absence for fourteen days from October 10.

A. A. Surgeon R. T. Walker, granted leave of absence for three days.

Sanitary Inspector Lea Hume, granted leave of absence for October.

Surgeon C. E. Banks, granted leave of absence for four days from October 9.

Surgeon L. L. Williams, to proceed to Baltimore, Md., as inspector.

P. A. Surgeon C. P. Wertenbaker, three days' leave of absence from Oct. 5, 1901, under paragraph 179 of the regulations.

P. A. Surgeon C. H. Gardner, one day's leave of absence under paragraph 179 of the regulations.

Asst.-Surgeon M. H. Foster, granted leave of absence for four days.

A. A. Surgeon Felix Giralt, to proceed to Vera Cruz, Mexico, for temporary duty.

A. A. Surgeon Jay Tuttle, granted leave of absence for thirty days from October 4.

A. A. Surgeon W. S. Walkley, granted leave of absence for eleven days from September 28.

Hospital Steward S. W. Richardson, granted leave of absence for two days.

Hospital Steward H. Walerius, relieved from duty at Memphis, Tenn., and directed to proceed to Portland, Me., and report to the medical officer in command for duty and assignment to quarters, relieving Hospital Steward E. H. Holt.

Hospital Steward E. H. Holt, upon being relieved by Hospital Steward M. Walerius, to proceed to Memphis, Tenn., and report to medical officer in command for duty and assignment to quarters.

P. A. Surgeon J. A. Nydegger, upon being relieved by Asst.-Surgeon J. M. Holt, to proceed to Baltimore, Md., and report to medical officer in command for duty and assignment to quarters.

Asst.-Surgeon J. M. Holt, upon arrival of Asst.-Surgeon W. C Billings, to proceed to Cairo, Ill., relieving P. A. Surgeon J. A. Nydegger, and assume temporary command during absence of P. A. Surgeon J. H. Oakley on leave.

A. A. Surgeon D. E. Dudley, granted leave of absence, on account of sickness, for thirty days from October 7. Granted leave of absence for thirty days from November 7.

A. A. Surgeon B. W. Goldsborough, granted leave of absence for ten days from October 10.

Hospital Steward E. S. Maguire, granted leave of absence for seven days from October 6.

Hospital Steward W. F. Schlaar, granted leave of absence for thirty days from October 15.

Hospital Steward Frank Siedenburg, directed to report to medical officer in command, Chicago, for duty and assignment to quarters.

BOARD CONVENED.

Board convened for the purpose of selecting site for quarantine station at Brunswick, Ga. Detail for the Board: Surgeon J. H. White, M.-H. S., chairman; Captain J. C. Mitchell, R.C.S.; A. A. Surgeon Hugh Burford, M.-H. S., recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended October 19, 1901:

SMALLPOX—UNITED STATES.

Iowa: Ottumwa, Sept. 7-28, 24 cases.
Massachusetts: Boston, Oct. 5-12, 5 cases.
Michigan: Detroit, Oct. 5-12, 1 case.
New Jersey: Oct. 5-12, Camden, 1 case; Newark, 4 cases, 3 deaths.
New York: New York, Oct. 5-12, 7 cases, 2 deaths.
Ohio: Youngstown, Oct. 5-12, 1 case.
Pennsylvania: Oct. 5-12, Erie, 2 cases; Norristown, 1 case; Philadelphia, 60 cases, 2 deaths.
Rhode Island: Newport, Oct. 5-12, 1 case.
Vermont: Burlington, Sept. 28-Oct. 12, 13 cases.
Wisconsin: Green Bay, Oct. 6-13, 1 case.

SMALLPOX—FOREIGN.

Austria: Prague, Sept. 21-28, 4 cases.
Belgium: Sept. 21-28, Antwerp, 2 cases, 1 death; Ghent, 1 death.
Brazil: Rio de Janeiro, Aug. 18-Sept. 1, 115 deaths.
Colombia: Colon, Sept. 30-Oct. 6, 1 case; Panama, Sept. 30-Oct. 7, 125 cases.
Ecuador: Guayaquil, Aug. 3-Sept. 21, 25 deaths.
France: Paris, Sept. 10-28, 9 deaths.
Great Britain: London, Sept. 21-28, 163 cases, 6 deaths.
Italy: Naples, Sept. 21-28, 71 cases, 4 deaths; Palermo, Sept. 14-21, 1 death.
Mexico: Hunucma, Sept. 21, epidemic; Vera Cruz, Sept. 28-Oct. 5, 7 cases, 4 deaths.
Russia: Moscow, Sept. 14-21, 1 case; St. Petersburg, Sept. 14-28, 3 cases, 1 death.
Uruguay: Montevideo, July 27-Aug. 24, 71 cases, 10 deaths.

YELLOW FEVER.

Brazil: Rio de Janeiro, Aug. 18-Sept. 1, 3 deaths.
Costa Rica: Port Limon, Sept. 28-Oct. 5, 8 cases, 3 deaths.
Cuba: Havana, Sept. 28-Oct. 5, 3 cases.
Mexico: Merida, Sept. 14-21, a few deaths; Valladolid, Sept. 14-21, epidemic; Vera Cruz, Sept. 21-28, 6 cases, 2 deaths.

PLAGUE.

Philippines: Manila, Aug. 25-31, 5 cases, 4 deaths.
Japan: Formosa, Sept. 7-14, 5 cases, 4 deaths.

CHOLERA.

Japan: Onsen District, Sept. 7-14, 1 case.
Straits Settlements: Singapore, Aug. 25-31, 1 death.